THE CONSERVATIONIST

State of New York Conservation Department October - November 1961

Evolution of a word

The word "conservation" slips easily off the tongue. It's a simple word to say; much more difficult to define. Doubt it? Stop twenty people at random and ask what conservation means to them. You'll get some interesting answers that may range from:—"Well, they've got closed seasons on deer and trout and stuff, and game protectors out there to catch people breaking the law" . . . "Saving the soil, I guess; you know, all farmers used to plow up and down hill and the water washed the soil away, but now they plow around the hill" . . . "Why, planting trees—the foresters do that to replace all those that were cut down" . . . "Oh, they have fish hatcheries and game farms, and they stock the streams and put out birds." It's even possible that you will have one honest man in your sample poll; a fellow who will think a bit before replying: "Well, ah, I guess it's—hmm, I'll be damned if I know just what it does mean." You had better stop right there, pollster, for that's about the best answer you are going to get.

However, if you wish to pursue this to an analysis of the information collected, you will find a few themes common to the whole: 1. The average person's concept of conservation is narrow, often mirroring a personal interest or hobby; seldom indicating any recognition of the complexity of the whole or the interrelationships involved. 2. The term automatically suggests something related to natural resources, in one form or another. 3. The image of "some one" out there doing something about it—arresting poachers, directing farmers to plow around hills, planting trees, pouring pail fulls of fish into the streams, throwing pheasants into the air, perhaps even bottling samples of water or peering into microscopes—but doing something!

Let's consider themes 2 and 3. They offer interesting evidence of what might be termed the evolution of a word, for in the beginning, conservation and natural resources were not so inextricably linked, nor was there the inference of dynamic action to peer into, manipulate and manage these natural resources for the betterment of mankind. Consult any standard dictionary and you will see that the first and preferred definition of conservation is "the act of keeping or protecting from loss or injury ----."

We are not about to try to bridge this gap between early simplicity and the modern "action" concept by adding to such old reliable definitions as "the greatest good for the greatest number for the longest possible time," etc. We doubt very much, in fact, that a satisfactory definition exists for this human enterprise that is in part art, in part science. And we applaud every advance made in knowledge and technology to manage our natural resources better, but let us not in our zeal to manage, lose sight of the need to "keep and protect from loss or injury" that which we have.—Editor

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State of New York Conservation Department

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EARL McGUIRK, FRED CHAMBERS	Photographers
W. I. VAN DER POEL, JR.	Design and Typography

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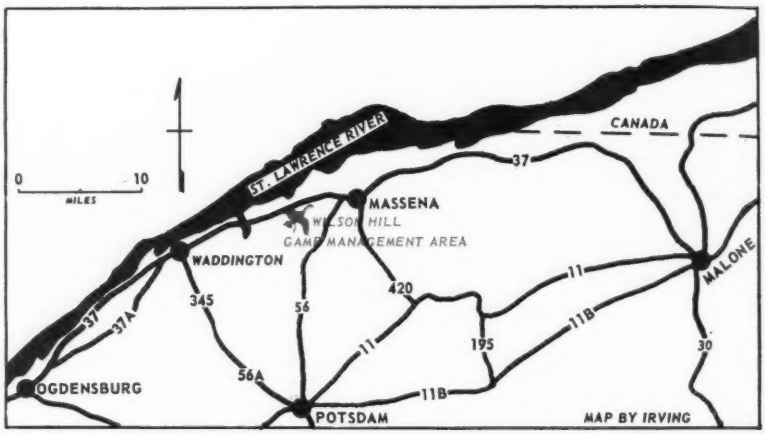
Controlled Waterfowl Hunting

by John E. Wilson, Robert F. Perry,
Regional Supervisors, Fish and Game,
N. Y. S. Conservation Department

THE development of waterfowl management areas in New York encompasses many natural resource values. Of first importance is the perpetuation of quality wetlands to provide the necessary habitat for New York's share of the continental waterfowl population. This waterfowl resource should provide recreational value for a maximum number of people, including waterfowl hunters. This is an important objective in the development of New York's wetlands management areas.

The rapid growth of the human population and consequent demands for greater recreational opportunity has posed serious problems in the management of these wetland resources. The problems related to the operation of public hunting facilities on the management areas to provide quality recreational value is currently unresolved. If the "recreational value" of waterfowl in relation to waterfowl hunting on a management unit is dependent upon (1) the extent to which natural conditions prevail; (2) standards of hunter conduct; (3) hunting opportunity based on a seasonal dispersal of waterfowl populations; and (4) the number of waterfowl hunters per unit area—it follows that it is essential to establish certain standards for public hunting on these wetlands management areas. These standards of regulation unfortunately have resulted from untenable conditions in relation to existing numbers of hunters utilizing public management units. On many such areas, the number of hunters afield on the opening day of the season has resulted in the movement of entire waterfowl populations from the area; elbow to elbow gunning; out of range shooting with consequent high crippling losses. Such conditions are certainly not conducive to the esthetic values that quality waterfowling should provide.

Here is how the Conservation Department is attempting to manage its two largest waterfowl areas for the best interest of all concerned.



Wilson Hill Game Management Area

The Wilson Hill Game Management Area, located in St. Lawrence County approximately seven miles west of Massena on the St. Lawrence Power Pool, has provided us with the opportunity to establish certain standards for public waterfowl hunting. This 3,500-acre wetland area is unique in that it was developed in conjunction with the St. Lawrence Seaway Development Project, under agreement with the N.Y.S. Power Authority. The level lay of the land is ideally suited for waterfowl management, and 1,875 acres are stable water impoundments formed by dikes. In addition, there are 400 acres of unstabilized shallow water area. The initial response by breeding and migrant waterfowl after the first flooding in 1958 was excellent. Brood counts, during the summers of 1959-1960, indicated excellent production of blacks, mallards, blue-winged teal and woodducks. Shovelers, baldpates, pintails, ringnecks and green-winged teal occurred as breeders in lesser numbers.

From the summer of 1958 until the fall of 1960, the entire area was operated as a refuge unit designed to encourage the establishment of a sizeable local breeding population of waterfowl. Subsequent banding studies, however, indicated that local breeding birds might well leave the area in sizeable numbers prior to the open season date in New York.

In the development of a long range management plan for the area, consideration was given to setting aside a part of the area for a public hunting unit. Unrestricted numbers of hunters, as previously mentioned, precludes opportunity for sustained hunter satisfaction. Since waterfowl are highly mobile, any excessive pressure can materially reduce total hunting opportunity on a unit area. A view of most public marsh areas—following the opening day of the waterfowl season—is testimony to this. Restricting the number of hunters on such areas and regulating the shooting pattern are essential tools to assure extension of hunting opportunity.

Weather, bag limits and length of season serve to control the total harvest and are important factors to be considered in relation to the operation of public waterfowl hunting units. In northern New York a mid-October season opening date restricts, in most years, hunting opportunity on certain species. The peak migration of marsh ducks normally move

south of this latitude relatively early in the fall. Diving or river ducks may, on the other hand, be concentrated in sizeable numbers on the larger adjacent waters. This causes much concern as to season dates among waterfowlers as well as creating problems in the management of areas that provide marsh duck hunting.

Public hunting opportunity on waterfowl currently doesn't pose as serious a problem in northern New York as elsewhere in the State and it was possible in the fall of 1960 to establish on the Wilson Hill Game Management Area an effective public hunting system. The basis for this controlled system was (1) to obtain a maximum amount of information relative to waterfowl harvest on the area and (2) to determine if quality hunting could be sustained throughout the season. Since no provision for a fee system was established, the cost involved in the operation of a permit system was an important consideration. The management unit of 1,850 acres was comprised of the east and west pool units. The east pool of the management area, 800 acres, was retained as refuge. The west pool of approximately 1,000 acres was designated as a controlled public hunting unit. Waterfowl hunting was permitted on the first Tuesday of the open season as prescribed by State and Federal regulations, and each Tuesday, Thursday and Saturday thereafter until November 29th. The hunting unit was open with no restriction after this date until the season closing date. Shooting commenced a half hour before sunrise and continued until 12 noon E.S.T. Fifty permits were available each hunting day designated, upon personal application by the hunter, using a card form provided at the permit station. Each hunter was issued a permit card upon filing his application, at which time he temporarily surrendered his hunting license. The receipt of the hunting license assured a systematic "check out" of each hunter. A total of 18 half days of hunting were permitted, and at no time was the total number of permits available issued. Thirty-four hunters was the maximum afield a day and fifteen the daily average for the season.

A maximum amount of local publicity was given to the area prior to the waterfowl season. Daily papers in the area carried complete hunting regulations, including a reproduced map of the Wilson Hill Game Management Area. Further publicity was given by personal contact, talks to sportsmen's groups and distribution of an Area brochure.

The anticipated use of the Area by waterfowlers was much below expected levels. Regulatory procedures and the amount of local hunting opportunity elsewhere in surrounding areas probably reduced participation by experienced waterfowl hunters. Waterfowl occurred in large numbers in the public hunting area as well as the refuge unit until mid-November. A large scale migration of birds was apparent the third week in November but this had no apparent relationship to hunting pressure as the movement of birds was also evident on the adjoining refuge unit. Hunting opportunity was excellent up to the time of this migration. Diving ducks, consisting primarily of whistlers and ringnecks provided the greatest amount of hunting opportunity after mid-November. A total of 245 ducks representing 16 species or approximately one duck per hunter were taken during the season.

A waterfowl banding study conducted in conjunction with the controlled public hunting unit indicated that hunting resulted in no significant harvest of birds reared locally. A total of 1,800 birds banded prior to and during the season, resulted in recoveries of only three banded birds on the public hunting area.

The cost of the operation of the public shooting area, included 18 man-days operation of the checking station, printing costs for regulations, permits and applications, protective patrol, establishment and maintenance of parking areas, road maintenance and posting. These are

Canada geese, by the thousands, stop off at Oak Orchard Game Management Area

basic expenses, most of which are essential to routine development and management of the area. A total of 265 man-days waterfowl hunting was obtained during the season. If the area had been hunted to the limit provided under the regulations established, a total of 900 man-days would have been afforded. Thus, there was less than 30 per cent utilization of available hunting opportunity. The cost of the waterfowl permit system, based on the actual 265 man-days use, averaged approximately $1.70 for each permit issued. If the maximum number of permits available had been utilized each day, the cost would have been reduced to approximately 50¢ per permit.

Summary

The initial operation of the controlled waterfowl hunting system on the Wilson Hill Game Management Area during 1960 may be summarized as follows:

(1) The permit system operated with a minimum of inconveniences to hunters and no difficulties were encountered with the regulations established.

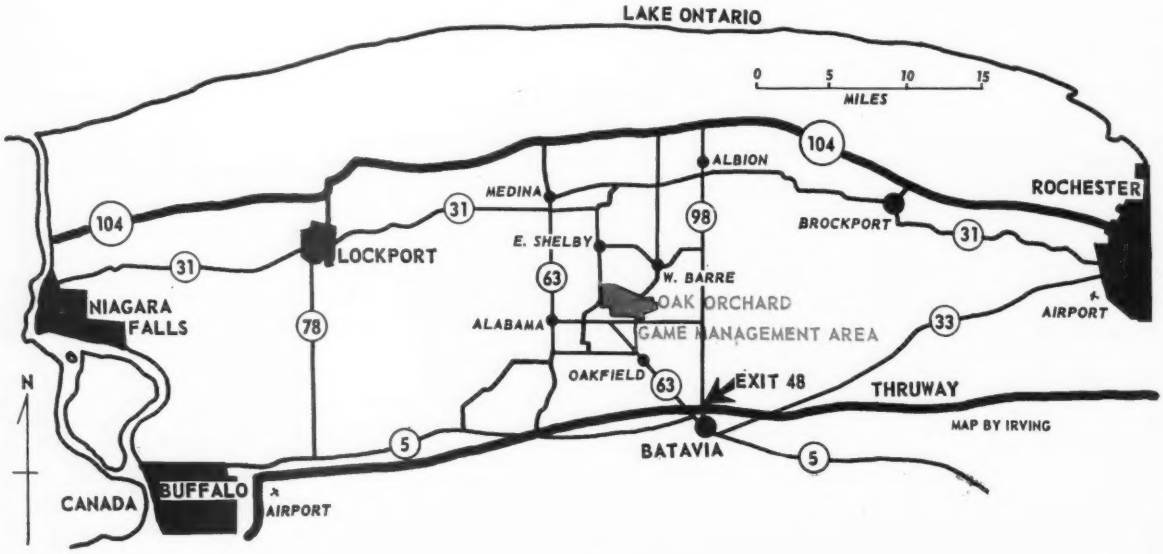
(2) The area operated under a permit system which provided a high degree of hunter satisfaction to the majority of sportsmen participating.

(3) The operation of the permit system produced a maximum amount of data on waterfowl kill that couldn't have been obtained in any other manner.

(4) The cost of a controlled system for public hunting should be a direct charge to the participants in cases where hunting pressure warrants control. Costs of operation of controlled shooting will increase as hunter participation becomes greater, necessitating a greater degree of regulation.

(5) The majority of waterfowl hunters were unfamiliar with waterfowl identification and reluctant to report crippled or wounded birds. It was further evident that a small minority of the hunters using the area were experienced waterfowl hunters.

(6) The waterfowl population was not noticeably affected by hunting pressure. Duck populations moved normally.



Oak Orchard Game Management Area

More than two million people live within an hour's drive of the Oak Orchard Game Management Area. As the crow flies, the Area is almost in a direct line and about midway between Rochester and Buffalo. It is on the northern edge of Genesee County about twelve miles north of the Thruway exit at Batavia.

Most of this Area of swamp land was purchased before World War II, and key features of the development plan, primarily a series of water control structures, were completed in 1948. Subsequent purchases have increased the size of this Area to about 2,400 acres. Various developments, some initiated as pioneering experiments, including feeding paddies, nesting meadows, refuge units, "duck nesting baskets," and a 250-acre per year farming operation have made this project one of the most productive

Labrador retriever

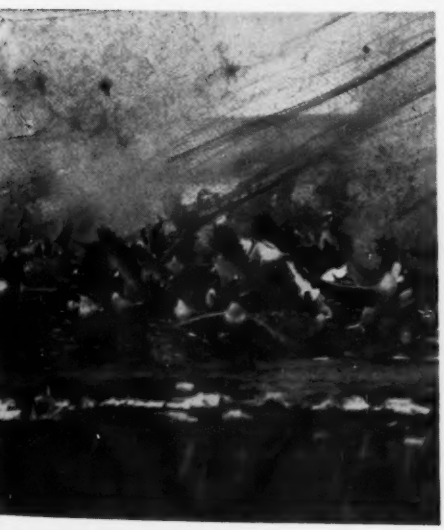
waterfowl areas in the western part of the State.

Prior to purchase by the State, private interests had developed parts of the Area and a few people enjoyed excellent marsh duck hunting. Unrestricted public hunting was permitted after purchase of more than half of the Area outside key sections that were established and marked as refuge.

Hunting pressure increased gradually and by 1954 there were signs of trouble when an estimated 600 hunters visited the Area on opening day. On the opening day of the duck season in 1955 it was estimated that over 1,200 hunters swarmed into the Area. The project virtually exploded, and almost every duck that wasn't "killed" within the first few hours departed. The refuge aspect of the Area was destroyed for the season and it was obvious that such a situation could not be tolerated in the future.

A need for some form of controlled hunting was apparent and in 1956 a quota of 200 hunters per day, three days per week, was established. A permit system was inaugurated on a first-come, first-served basis with permits available at a centrally located permit station. This system worked nicely in 1956, but in 1957 some hunters to be sure of securing permits, assembled as much as 24 hours ahead of the opening time. The demand for permits was considerably in excess of the quota that had been set and large numbers of hunters lost their opportunity to hunt on opening day in addition to the time and expense of driving to the Area and waiting in line. Accordingly, in 1958 regulations for issuing permits were revised to provide for advance registration by mail together with other minor changes designed to promote more orderly and sportsman-like conduct of hunters.

A cannon net in use at Oak Orchard to capture geese for banding



Since the inception of the hunter control plan, over 2,000 permits have been issued each year and the kill has averaged approximately one duck per permit. The best features of hunter control systems in effect elsewhere in the country have been incorporated in the Oak Orchard plan and it is hoped that the experience here will result in a system that can be applied elsewhere in New York under similar circumstances.

During the process of development, Oak Orchard has served as something of an outdoor laboratory where new management techniques have been tested. Much of this work has been by trial and error, on a pioneering basis with "multiple-use" as an ultimate objective.

Research work carried out on the Area involves the trapping and banding of large numbers of geese and ducks and experimental liberation of various species in attempts to establish breeding populations. A new technique for furnishing nesting sites for black ducks and mallards has resulted in increased productivity of these species. Other experimental practices involve testing of methods for predator control, carp control, planting wildlife shrubs and various mixtures of grain and other seeds, brush control by use of mechanical devices and herbicides and a long list of other interesting and potentially valuable practices.

In 1955 part of the Oak Orchard Area was made available for use as a field trial grounds for retrieving dogs. Top grade retriever trials are run monthly under standard regulations of the American Kennel Club and numerous dogs have qualified in these trials for National Championship competition. In June, 1960 the National Amateur Retriever Trial was held on the Area with most of the top grade retrievers in the nation in competition. Various improvements including a field house, which is available on request for other public use, have been incorporated in routine development schedules designed to encourage this worthwhile conservation activity.

Part of the Oak Orchard Area has been developed as a forest tree nursery where some 10 million seedlings per year are produced to supplement other nursery facilities of the Department. These seedling trees will provide much needed wildlife cover throughout the western part of the State in addition to serving other purposes.

For a period of about a month in late March and early April great numbers of Canada geese can be observed from a vantage point overlooking a part of the Oak Orchard Area called Goose Pond. This is a spectacle that can be matched at only a few other locations in the country and is enjoyed by at least 10,000 people each year. The amusing and intriguing antics of these geese, as well as the flights of large numbers of pintail ducks and other waterfowl that stop off at the Area enroute to their northern breeding grounds, must be seen to be fully appreciated. It is a wildlife show without equal in this part of the country.

Three picnic areas and an observation tower have recently been added to the other attractions and public use features at Oak Orchard.

What has been done at Oak Orchard can be duplicated eventually on areas now being acquired with funds provided by the bond issue established for acquisition of recreation lands. Controlled hunting under regulations similar to those in effect at both areas will help to guarantee perpetuation of the opportunity to hunt waterfowl and to enjoy other natural phenomena inherent in wetland environments in New York.

What will be the future role of controlled public hunting on public wetlands in New York? We can expect that the acquisition of prime wetlands will be greatly accelerated under the recreational bond issue, thus providing for a total increase in public hunting opportunity. It will not, however, be feasible or in many cases desirable to intensively manage these areas to the point of providing for controlled waterfowl harvest. We can expect that in the immediate future controlled hunting will be incorporated only on those wetlands units most intensively managed and, therefore, capable of providing sustained annual waterfowl populations. The expense involved in the operation of a controlled hunting system in itself may well limit application on public wetlands.

The retaining of high recreational values from waterfowl hunting and related uses, should continue a prime management objective for public wetlands in New York. The degree to which this objective can be achieved will ultimately be based on the interest that the waterfowl hunters utilizing public owned wetlands have in the perpetuation of quality waterfowl hunting.

Conservation Exhibit at Schen

Community Effort Plus Imagination Tells the Story o

by Eugenia B. Christensen, Supervisor, Halls of Adventure, Schenectady Museum

WHEN Donald S. Smith, Director of the Schenectady Museum, suggested conservation as the subject for the 1961-1962 exhibit for the Museum's Halls of Adventure, there was no little doubt expressed by the twenty young women volunteers who were to materialize it.

"How can you *show* a child conservation?"

"Some of them don't know the difference between 'conservation' and 'conversation'!"

"It's a good idea. But. . . .!"

However, after two hours of brainstorming, the group agreed that the subject presented a challenge too great to be ignored. Conservation it would be.

The Halls of Adventure is a project of the Junior League of Schenectady. Its purpose is to present during each school year an exhibit which visualizes factual information of interest to the elementary school child and which fits into the school curricula. School classes are brought to the Museum by appointment and a docent, or guide, takes the group on a forty-five minute tour of the exhibit, telling the story and answering questions.

All research, planning and construction was done by a group of young women, either Junior League members or other volunteers who are interested in the Museum as the cultural center of their community. They worked directly under the supervision of Gardell Dano Christensen, Curator of Exhibits for the Museum, but only when a problem seemed insurmountable to them did he step in with suggestions or technical and mechanical help.

By spending two hours each per week, the volunteers construct one exhibit a year. The conservation exhibit opened on October 8, 1961 and will remain on view until June 15, 1962. The material is presented in about 924 square feet of floor space which includes a corridor and three small galleries in the basement of the Museum.

The first step of research was a study made among children from six to twelve years of age to find out what the child thought of when the word "conservation" was mentioned. It was found that most children had a vague, abstract mental picture in relation to the word and were unable to associate it in any fashion directly with themselves or their families.

Inter-relation of soil and plants shown by layered cutaway; plastic flowers, a real tree trunk and roots give three dimensional effect. Children can see and touch samples of various types of soil displayed in clear plastic boxes

Plants and animals —in the water and out. Panel will stress interdependence of plants, animals, air and water

The volunteers felt that it would be wise to present the idea of conservation of natural resources for a purpose the child could easily understand. They chose camping as the focal point. Since almost every child is familiar with camping in some form, an effort has been made to identify the unfamiliar aspects of soil, water and forest conservation with the familiar utilization of natural resources when camping.

The over-all presentation was broken down into five parts: Introduction, Air and Water, Soil and Plants, Flora and Fauna, and Camping. Four workers were assigned to each part for which they did extensive research before beginning sketches for the displays. They wrote to the Conservation Department of each state asking for maps of campsites, program materials and related publications. They stripped the shelves of the children's room at the public library of books on conservation and visited school libraries to find out what materials they contained on this subject. They visited teachers to find out what was being taught about conservation, they looked at films on conservation to get ideas and they haunted the offices of the New York State Conservation Department.

Business firms in the community were asked to contribute items to help make

ectady Museum

Conservation to Children in a Big City

Left—Conservation on parade — pictorially

Below—This part of exhibit models a campsite scene

Right—Colored flags and pins are used on outline map of United States to locate state and national public campsites and wildlife management areas. Harvesting the wildlife crop as a conservation measure is stressed

the exhibit as realistic as possible. A small tent, camp stove, ice box and other camping facilities were loaned by a local sporting goods store. A life-sized manequin, donated by a fur shop, was transformed into a bow-and-arrow hunter.

Miss Ruth Adams, head of the children's room at the Schenectady Public Library, offered to make up a colorful book list which includes all books on conservation and related subjects to be found in the children's library. These are mimeographed in seemingly unlimited numbers and are turned over to Mrs. Eugenia Christensen, Supervisor of the Halls of Adventure, who gives one to each child who visits the exhibit. Others are distributed at the library branches and by the bookmobiles.

Mrs. Charles Eitelman, teacher of the Conservation Class at the Museum for ten years and past Secretary-Treasurer of the Mohawk-Hudson Federation of Conservation Councils, gave hours of her time to assemble materials to be sent to teachers and others interested in visiting the exhibit. With the aid of members of her class, she wrote for printed pamphlets from government departments on the phases of conservation covered in the exhibit, collated them and had printed a sheet setting forth pertinent facts about the material in relation to the exhibit. These are mailed by the Museum to each teacher who makes an appointment for a class visit and to anyone else who expresses a desire to know more about the facility. Members of the Conservation Class also have made a number of posters which were placed in school libraries.

Mrs. Christensen is responsible for coordination between the schools and the Museum. She visits the schools personally, speaking to faculty, students and P.-T.A.'s on the pleasure and profit the Museum exhibits have to offer, and appears as a guest on educational television programs. She writes publicity which is used not only in the newspapers of the surrounding area but also as a column called "From the Halls of Adventure" in *The Junior League Newsletter*, school publications and any other available sources.

A film series for children sponsored by the Halls of Adventure each Saturday morning and afternoon includes several programs during the year on conservation, and members of the State Conservation Department have been most generous with their time to speak at some of these presentations. It has been interesting to note over a period of three years that films on wildlife always draw record attendance.

Besides the educational value of the project, many "fringe benefits" have been derived directly from it. Children who visited the exhibit with a school field trip have returned on Saturdays, bringing their parents and repeating almost word for word the information they had learned; information which often was new to the adults.

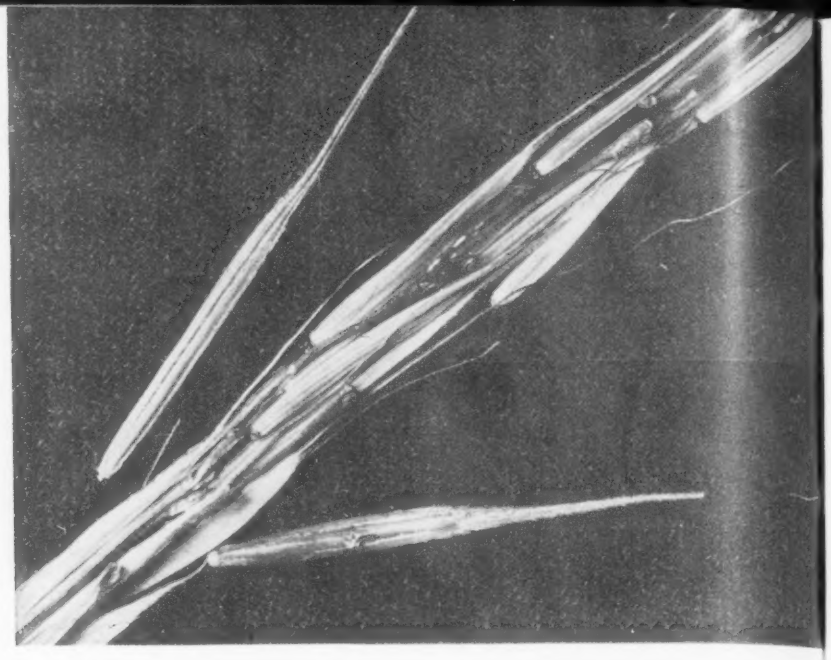
Enthusiastic teachers returned to the classroom and encouraged students to make miniature dioramas in shoe boxes of scenes from the exhibit, thus teaching by repetition and creativity. The dioramas have been displayed in the hallways of schools and in the public library.

Art classes have used the exhibit from which to draw and paint, and their finished work has been used in the public library to make up a display on conservation.

One of the most satisfying rewards for the months of hard work was to receive folders of "thank you" letters from school classes which had visited the exhibit. One letter included the following comment:

"We never knew that conservation could be so exciting!"

Footnote: The staff of the Schenectady Museum will be happy to furnish further technical information in relation to design, construction methods, materials, etc.



Wild Rice

—A Native Aquatic and a Valuable One

by Frederick B. Emerson, Jr.,
Research Assistant,
Department of Conservation,
Cornell University

FEW of our native North American plants have as colorful a history as the aquatic grass—wild rice. Growing in the Atlantic and Gulf Coast tidal marshes and inland lakes and streams, wild rice was once an important food of the Indians, and later of the white explorers, missionaries and fur traders of the Northwest Territory. Today, it continues to serve as a valuable waterfowl food and cover plant, but because of its high cost and limited supply, processed wild rice is now regarded as a culinary delicacy for special occasions.

The lake region of the Northwest Territory, now a part of Wisconsin and Minnesota, abounded in fish, wild game and valuable birch bark. In addition, it possessed many thousands of acres of wild rice beds. This very desirable area with its plentiful natural resources was the setting of a long struggle between the Sioux and Chippewa Indians for full possession of the lands. The fighting lasted for several centuries until 1862 when the Federal government removed the Sioux. Thus, the Indians, who harvest wild rice in this region today, belong to the Chippewa Tribe.

Names and Characteristics

The scientific name of wild rice is *Zizania aquatica L.*, but many popular names have been used for this species. These include: Wild rice, Canadian rice, American rice, Indian rice, squaw rice, wild oats, water oats and blackbird oats—to mention but a few. The Algonquian word for this plant is *manomin* meaning "good berry." Indian, French and English words referring to wild rice have been used to name a host of geographical features and political areas in the rice district of Wisconsin and Minnesota and in the neighboring provinces of Manitoba and Ontario. Wisconsin has about twenty water areas bearing the name "rice" and Minnesota has around ninety. As their name indicates, the Menomini, a tribe of the Algonquian linguistic stock inhabiting this region, are literally "the wild rice people." The common occurrence of such terms relating to wild rice attests to the prominent role it has played in the history of the region.

Like cultivated rice, wild rice grows in shallow water usually less than three feet deep. Wild rice is not the ancestor of cultivated rice; the two grasses are not even closely related. The closest relative of our wild rice is the Manchurian water rice *(Zizania latifolia)*, native to northeastern Asia.

Fine stand of wild rice at a wildlife marsh in Schuyler County

Wild rice is a tall, annual grass which grows from seed each year as do corn, wheat, barley and other commonly cultivated grains. Natural reseeding takes place each fall and an established stand normally maintains itself without any intervention by man. Some stands in Minnesota have been recorded as producing yearly crops for nearly three centuries. New York is included in the natural range of wild rice; however, this species does not occur in the artificially created wildlife marshes in the State unless it is intentionally introduced.

After the ice melts in the spring, and the water begins to warm, the wild rice grain which has been lying in the mud of the marsh bottom is stimulated to germinate. In New York this occurs in early May. Wild rice germinates earlier in the southern part of its range. The seedling grows to the surface where its leaves float throughout June. In July it sends up an erect stem which will eventually bear unisexual flowers in a terminal panicle. The mature plant attains a height of three to ten feet. The tallest representatives of the species are found along the Atlantic and Gulf coasts and the shortest variety occurs in the northern part of its range in southern Canada and the northern United States.

Wild rice flowers in July. The appressed, pistillate spikelets are above the spreading branches which bear the staminate spikelets. The grains mature in late August and early September. The grains of a single plant do not all mature at the same time; those near the tip ripen and fall first. Several days are required for an individual plant to shatter its grains, and the process may take ten days to two weeks for an entire stand. In areas where the grain is harvested for commercial purposes by knocking the ripe grains from the plants into canoes, several trips through each rice bed are required during the harvesting season to get even a small fraction of the total number of grains produced. Twenty per cent of the total constitutes a good harvest, so plenty of grain is left for waterfowl and seed for the next year's growth. The fallen grains sink to the bottom of the marsh immediately. Many germinate the following spring, but it has also been reported that the germination of some is delayed for at least 18 months. Thus, should a natural catastrophe cause a crop failure so that no new grains are dropped, a good growth may still be produced the following year.

Growth Requirements

Several requirements are generally regarded as essential for a good stand of wild rice. These are: (1) A soft bottom such as mud, (2) clear water having some circulation and a fairly stable level during the growing season and (3) soils which are only slightly acid to neutral as reflected by a total alkalinity of the water of at least 40 parts of calcium carbonate per million parts of water and a range of water pH values from 7.5 to 8.5. It is not certain just what role is ascribed to water circulation by those authors who emphasize it. It has been suggested that it assures an adequate supply of oxygen for the germination of the seed. Excellent stands of wild rice have developed in New York marshes having no flow through their outlets during the growing season, so apparently such circulation as the wind provides is enough to fulfill this requirement. In general, marshes created on good agricultural soils support a greater diversity and abundance of plant and animal life than those built on poor agricultural soils. Wild rice has its best chance to succeed when planted in marsh sites on fertile soils. However, some success has been achieved with plantings made in marshes on marginal agricultural soils having a soil pH as low as 5.8. Marshes with hard, clayey bottoms, stained water or a lot of flooded and decaying woody vegetation are unsuitable for wild rice. Waters which are roiled by the activities of farm animals or choked with algae or submergent vegetation are also unsuitable.

How and Where to Plant

Wild rice is planted by hand-broadcasting the seed into water up to three feet deep. The seed can be obtained from aquatic plant nurseries whose advertisements appear in sportsmen's magazines. The seed must be kept cool and moist until it is planted. The processed wild rice found on the grocer's shelf is no good for planting, of course. The best time to plant the rice seed is in the spring as soon as the ice has melted; rice planted up to a month after this time will still complete its growth and produce mature grain. Fall is Nature's planting time, but spring planting lessens the danger of destruction of the seeds by wildlife and damage due to freezing and upheaval of the soil. Care should be taken to avoid planting the seeds in areas which will be left high and dry as the water recedes later in the growing season. The current cost of wild rice seed is about $32 per bushel (25 pounds), an amount sufficient for planting one acre. A handful of rice is adequate to seed an area six feet square.

A successful stand of wild rice provides excellent cover in late summer and early fall and supplies food for migrating waterfowl. Other animal life is also attracted to this plant. Blackbirds feed upon the developing grains while they are still attached to the plant. Muskrats find the young shoots to their liking and it may be necessary to control these animals while a new stand of rice is becoming established. Cows and deer also graze on the foliage. Because of the ease with which it can be planted, its value to wildlife and its attractive appearance, wild rice is well worth considering for introduction into marshes which satisfy its requirements. However, the requirements and restrictions mentioned above should be carefully observed since indiscriminate planting of wild rice has failed more frequently than it has succeeded.

Rice and a marsh complement the farm scene

Go Get Lost!

A "Do-It-Yourself" Service

by Gerald Schneider

WANT to get away from it all, but you haven't the money for a fishing trip to Australia or a safari in Africa? Well, take heart—just leave the world and its worries behind and lose yourself in New York's vast forest land. It's cheaper and much nearer home. Getting lost is not difficult if you know how.

First you must forget everything you have ever learned about direction-finding. Help rid your mind of such impediments by repeating "Mark Trail is a nut." Burn back issues of sporting magazines. Throw away that wristwatch with built-in compass and sundial. Don't discuss woodsmanship with your know-it-all son who is a Boy Scout.

As a further aid in losing your way outdoors, I have prepared this special "do-it-yourself" guide to getting lost. It's a treatise for outdoorsmen who itch to get lost in the woods, but lack the skills to do so. Ten basic rules to apply:

1. Make sure you are really lost

When you cannot find your way for the moment, rush off at top speed through the woods. Run until you are completely exhausted. Avoid the temptation to sit down and think your problem out. There's a very good chance you would solve it and no longer be lost.

Shield your eyes with black patches to avoid seeing familiar landmarks, telephone poles or power lines even if only minutes from them. Stuff cotton in your ears to avoid hearing train whistles, dog barks, cattle calls or other sounds of civilization.

2. Don't light a fire

The smoke from a fire might attract rescuers to you and you don't want that! Three fires far enough apart to form three separate smoke columns is worse yet—it's a standard distress signal.

3. Beware of the downstream life

Walk upstream to avoid towns in the downstream valleys where most towns are. You are more assured of staying lost this way.

4. Straight paths lead to safety

Lost persons sometimes find their way by walking in a straight line until they reach civilization. They can do this by laying out a straight trail from a tree to a distant landmark and using another landmark up ahead each time they reach the one they have been steering for. Those who would stay lost must be careful not to travel "as the crow flies." Boozy-lining or teetering from anywhere to somewhere else under alcoholic influence, is more for the lost-minded.

5. Don't let the sun get in your eyes

Probably more lost persons find their way using directions from the sun than by any other means—except chance. Protect yourself from being guided out of the woods by the sun.

The sun rarely rises directly in the east or settles directly in the west. Therefore, this behavior of the sun is only good as a general guide to direction-finding. But you cannot take risks and remain lost, so shun the sun altogether as you move about.

As many woodsmen know, if you look at your shadow when the sun is directly overhead, it will point north. Facing north, the east is to your right, the west to your left, and the south, of course, is in back of you. Fortunately for the lost, the sun is overhead only at noontime and can easily be missed. Plan a long midday nap—thus avoiding temptation to orient yourself in this manner.

I know a fellow who can find his direction using the sun and his wristwatch at any time of day. He holds the watch level in the sunlight and stands a straight twig or a matchstick on the center of the watch's face so that the twig's shadow is cast on the watch's face. Half way between the hour hand as it then points and the numeral 12, going the shortest way around the watch's face, is north. Other directions are then derived from north.

Vow never to use such methods of direction-finding if you don't want to put a sudden end to your losing streak.

6. Keep star dust out of your eyes

Polaris, the North Star, is always in the north. It is the outermost star on the "handle" of the Small Dipper and easily located by direction seekers. For this reason, Polaris must be shunned as a cosmic plan to defeat the cause of lostness and bring the lost out of the woods.

A girl I know can find her way using any star. She peers at a star from the tip of a long stick held upright at arm's length. Keeping the stick steady, she notes the movement of the chosen star in relation to the stick. After watching a few minutes, if the star appears to move down, she knows she is facing generally westward; generally eastward if the star moves up; generally northward if the star curves to the left; south if to the right. Such sound practices offer nothing to those who would remain lost.

7. Watch what you sink your teeth into

Even lost persons must eat. If you succeed in staying lost long enough, you will make this discovery. Try to secure edible berries, fruits, and nuts. Don't eat mushrooms unless you are absolutely sure they are not poisonous. Since there is no simple rule for telling dangerous from non-dangerous plant foods, you should learn to recognize them before you are lost.

If threatened by starvation, most any fur-bearer, fish, turtle, frog, or such can be eaten if first skinned, cleaned out and cooked, if possible.

Some experts claim to have caught deer for food in an unique way. The equipment used includes a fifth of Scotch, a pail of water, a pair of forceps and a pair of binoculars. The pail of water is placed on the ground next to a tree which the trapper climbs with the other stuff. Then the Scotch is downed. A deer passes by, is attracted to the pail and walks over to it. As the deer nears the pail, the trapper looks at it through the objective lens of the binoculars, so the deer looks quite small. The trapper then lifts the deer up with the forceps, drops it into the pail of water and boils it immediately.

Not having tried this method, I cannot really endorse it, but it does sound promising in many respects.

8. Carry a lost kit

A lost kit is a box filled with liquor, black patches and other such aids to getting lost. It should not be confused with a survival kit which is a small waterproof container filled with matches, fish hooks, fish line, a compass, and first aid equipment—carried in a deep pocket of a woodsman's pants—for use in staying alive and finding your way when lost.

9. Use of common sense

The reason more of us don't get lost is that we use common sense in handling outdoor problems. To do a good job of getting lost you must panic when you cannot find your way for the moment (refer back to rule 1).

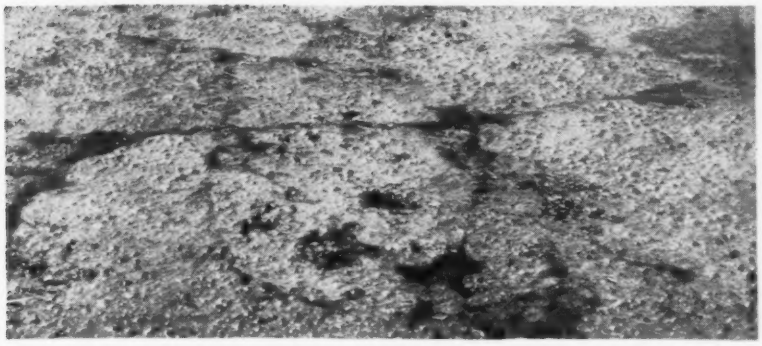
10. Learn from your experiences.

Practice getting lost. Each time you will do a better job of it. When you are never found again, you will have achieved the ultimate. Unfortunately, however, I have never been able to obtain testimonials to this effect.

Algae and Pollution

Some Facts and Fancies About a Big Problem and a Tiny Plant

by George Burdick, Senior Aquatic Biologist,
N. Y. S. Conservation Department



Floating mass of algae—Mohawk River

MOST fishermen of our warm-water lakes, as well as cottage owners who live along the shores of these waters, are familiar with the terms "the lake is in bloom," or "the lake is working." This is a summertime or early fall phenomenon which, particularly in lakes of high fertility, may be accurately, if unscientifically, described as a *mess!* During such periods the lake may look and smell around the margin like a sea of pea soup in the later stages of decomposition. Neither cottagers, nor fishermen—nor for that matter, fish—enjoy this situation—particularly fish which, under extreme and localized circumstances, may actually die from lack of oxygen in the water.

One would not think such a problem could be brought about by tiny plants—but it is; billions upon billions of them floating and feeding in these sun-warmed, nutrient-rich lake waters. These are the algae, a growth of almost microscopic plants containing volatile oils which can impart taste and odors to water and when cast up on shore decompose to release more of these oils, producing malodorous and obnoxious smells. Because of these odors it is frequently believed that algae are associated with and carry so-called sanitary sewage. Also, when these forms grow on the bottom, die and decompose, they may be buoyed up by air bubbles, break loose and float to the surface as patches of thick brownish scum. Further credence is lent to this popular misconception by the fact that sanitary sewage is rich in nitrogen and phosphorus compounds, similar to those utilized by the algae in their growth.

Algae types—X 125 to 5,500 times

Weather conditions have much to do with what algae species develop and how extensively the growth will develop. Where abundant rooted plant growth is absent, there is a tendency for algae to develop in huge numbers, with one growth following another at frequent intervals. The largest growths are frequently found in the richest, best fish producing lakes. In fact, fertilization, to produce this type of growth, is frequently used to increase fish production in management of certain waters, particularly farm ponds.

Nitrogen and phosphorus compounds are essential in the growth of all living things. Agricultural production can often be increased greatly by the addition of these materials in the form of organic and inorganic fertilizers. A similar function is performed in water.

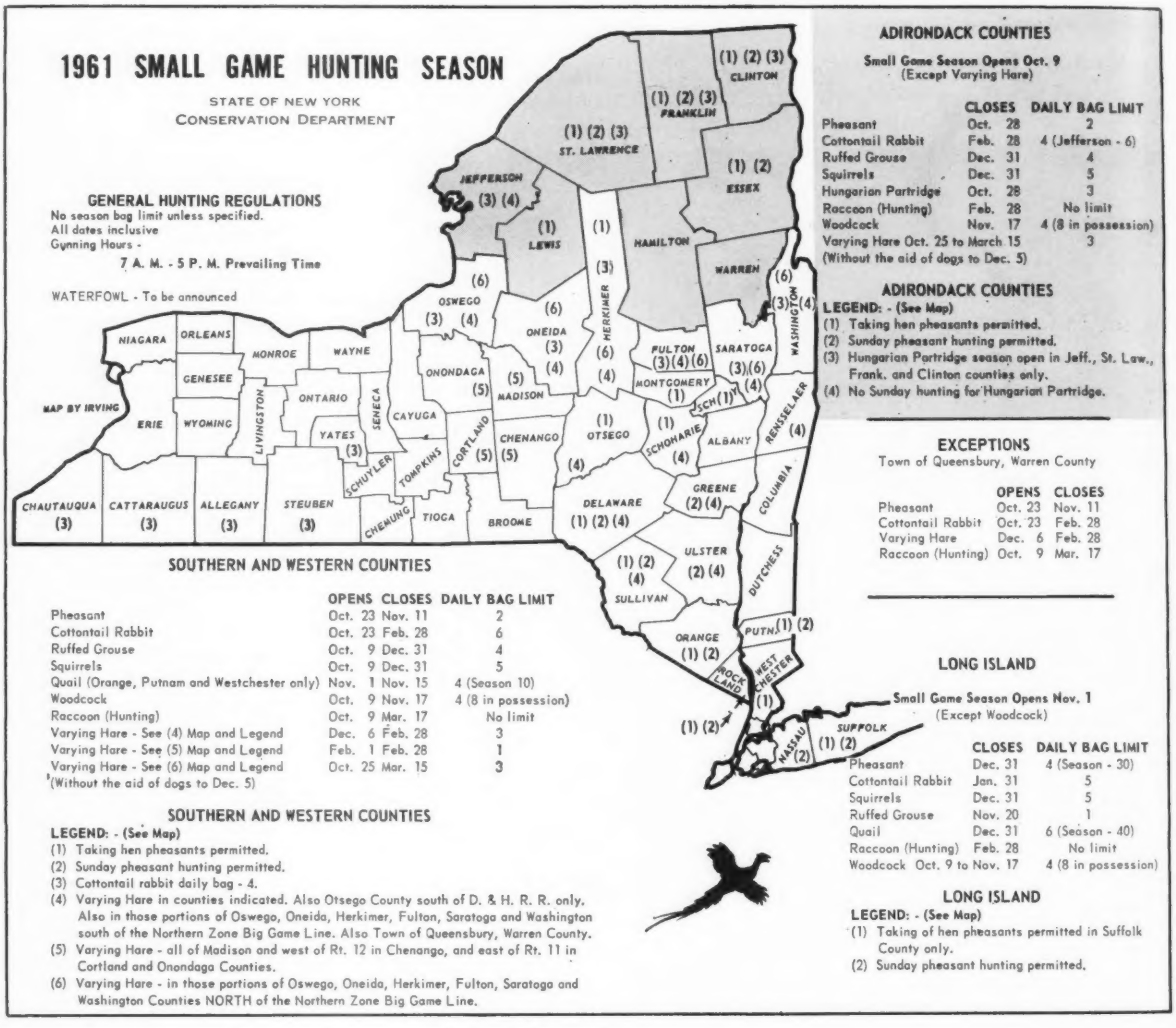
What is less widely known is that pollution abatement programs through sewage treatment, even when most complete, does little to decrease the nitrogen and phosphorus compounds that are transported in the water as soluble, mainly inorganic salts. In fact, the highest degree of treatment may render these compounds somewhat more readily available for utilization. Neither is it generally recognized that except in predominantly metropolitan areas, where sanitary sewage is a contributor of these substances, it is a minor contributor compared to the partially bound and recycled quantities of nitrogen and phosphorus compounds already in the lake or pond bottom, and that from watershed run-off from highly fertilized or limed agricultural lands, lawns and gardens.

Oneida Lake is an example of a body of water in this State frequently plagued with excessive algae growths. This year it again supported an algae growth that assumed, at least in localized areas, nuisance proportions. This is not a new condition in Oneida Lake. In the mid-1940's, such growths occurred and resulted in the death of millions of fish — mostly minnows and the young of game species — on the north shore where the algae became so densely packed that death and decomposition of the algae occurred, thus reducing the oxygen content of the water to lethal levels for fish. Some dead fish have been found this year in Oneida, not in such numbers, but presumably due to similar conditions in localized areas. It has not been found, however, that such localized mortality has seriously changed the fishing potential in lakes as large as Oneida. The minor mortality that has developed there so far this year will have practically no impact on Oneida Lake as a fishing water.

As indicated, rooted vegetation while reducing the amount of fertilizing substances available to algae is depressed and difficult to develop when algae growths are prevalent. Algae is thus somewhat self-perpetuating, since the greater their growth, the less competition they have from rooted aquatics for the nutrients they use. Algae growth is natural and to be expected in a lake with such a high level of productivity as Oneida, especially in the absence of extensive beds of rooted vegetation.

Small Game Season – 1961

by **Albert G. Hall**, Chief, Bureau of Game,


1961 SMALL GAME HUNTING SEASON
STATE OF NEW YORK
CONSERVATION DEPARTMENT
GENERAL HUNTING REGULATIONS
No season bag limit unless specified.
All dates inclusive
Gunning Hours -
7 A. M. - 5 P. M. Prevailing Time
WATERFOWL - To be announced
MAP BY IRVING
(1) (2) (3) CLINTON
(1) (2) (3) FRANKLIN
(1) (2) (3) ST. LAWRENCE
(1) (2) ESSEX
JEFFERSON (3) (4)
LEWIS (1)
HAMILTON (1) (3)
WARREN (6)
WASHINGTON (3) (4)
OSWEGO (6) (3) (4)
ONEIDA (6) (3) (4)
MERKIMER (6) (4)
FULTON (3) (4) (6)
SARATOGA (3) (6)
MONTGOMERY (1)
SCH (1)
RENSSELAER (4)
ALBANY
SCHOHARIE (1) (4)
OTSEGO (1) (4)
ONONDAGA (5)
MADISON (5)
CAYUGA
SENECA
ONTARIO
WAYNE
MONROE
ORLEANS
NIAGARA
GENESEE
LIVINGSTON
WYOMING
ERIE
YATES (3)
SCHUYLER
TOMPKINS
CORTLAND (5)
CHENANGO (5)
CHEMUNG
TIOGA
BROOME
DELAWARE (1) (2) (4)
GREENE (2) (4)
COLUMBIA
ULSTER (2) (4)
DUTCHESS
SULLIVAN (1) (2) (4)
ORANGE (1) (2)
PUTN. (1) (2)
ROCKLAND
WESTCHESTER (1)
(1) (2)
NASSAU (2)
SUFFOLK (1) (2)
CHAUTAUQUA (3)
CATTARAUGUS (3)
ALLEGANY (3)
STEUBEN (3)
SOUTHERN AND WESTERN COUNTIES
OPENS CLOSES DAILY BAG LIMIT
Pheasant Oct. 23 Nov. 11 2
Cottontail Rabbit Oct. 23 Feb. 28 6
Ruffed Grouse Oct. 9 Dec. 31 4
Squirrels Oct. 9 Dec. 31 5
Quail (Orange, Putnam and Westchester only) Nov. 1 Nov. 15 4 (Season 10)
Woodcock Oct. 9 Nov. 17 4 (8 in possession)
Raccoon (Hunting) Oct. 9 Mar. 17 No limit
Varying Hare - See (4) Map and Legend Dec. 6 Feb. 28 3
Varying Hare - See (5) Map and Legend Feb. 1 Feb. 28 1
Varying Hare - See (6) Map and Legend Oct. 25 Mar. 15 3
†(Without the aid of dogs to Dec. 5)
SOUTHERN AND WESTERN COUNTIES
LEGEND: - (See Map)
(1) Taking hen pheasants permitted.
(2) Sunday pheasant hunting permitted.
(3) Cottontail rabbit daily bag - 4.
(4) Varying Hare in counties indicated. Also Otsego County south of D. & H. R. R. only. Also in those portions of Oswego, Oneida, Herkimer, Fulton, Saratoga and Washington south of the Northern Zone Big Game Line. Also Town of Queensbury, Warren County.
(5) Varying Hare - all of Madison and west of Rt. 12 in Chenango, and east of Rt. 11 in Cortland and Onondaga Counties.
(6) Varying Hare - in those portions of Oswego, Oneida, Herkimer, Fulton, Saratoga and Washington Counties NORTH of the Northern Zone Big Game Line.
ADIRONDACK COUNTIES
Small Game Season Opens Oct. 9
(Except Varying Hare)
CLOSES DAILY BAG LIMIT
Pheasant Oct. 28 2
Cottontail Rabbit Feb. 28 4 (Jefferson - 6)
Ruffed Grouse Dec. 31 4
Squirrels Dec. 31 5
Hungarian Partridge Oct. 28 3
Raccoon (Hunting) Feb. 28 No limit
Woodcock Nov. 17 4 (8 in possession)
Varying Hare Oct. 25 to March 15 3
(Without the aid of dogs to Dec. 5)
ADIRONDACK COUNTIES
LEGEND: - (See Map)
(1) Taking hen pheasants permitted.
(2) Sunday pheasant hunting permitted.
(3) Hungarian Partridge season open in Jeff., St. Law., Frank. and Clinton counties only.
(4) No Sunday hunting for Hungarian Partridge.
EXCEPTIONS
Town of Queensbury, Warren County
OPENS CLOSES
Pheasant Oct. 23 Nov. 11
Cottontail Rabbit Oct. 23 Feb. 28
Varying Hare Dec. 6 Feb. 28
Raccoon (Hunting) Oct. 9 Mar. 17
LONG ISLAND
Small Game Season Opens Nov. 1
(Except Woodcock)
CLOSES DAILY BAG LIMIT
Pheasant Dec. 31 4 (Season - 30)
Cottontail Rabbit Jan. 31 5
Squirrels Dec. 31 5
Ruffed Grouse Nov. 20 1
Quail Dec. 31 6 (Season - 40)
Raccoon (Hunting) Feb. 28 No limit
Woodcock Oct. 9 to Nov. 17 4 (8 in possession)
LONG ISLAND
LEGEND: - (See Map)
(1) Taking of hen pheasants permitted in Suffolk County only.
(2) Sunday pheasant hunting permitted.

ANOTHER year rolls around and and here it is time to announce the small game season again. In some ways it seems we just finished the 1960 season—yet there's something about cool August mornings with a suggestion of frosts to come that makes one realize the hunting season is just around the corner. Better check the gun and give the dog a few preliminary workouts.

One of the best ways to view the 1961 season is to review what happened during the 1960 season; experience is a wonderful teacher and, of course, as has been indicated previously, consistency in seasons from year to year is desirable. The 1960 season, as was the case in 1959, was generally successful and the majority of hunters and landowners were satisfied. Problems of pressure or undesirable concentrations of hunters in small areas were at a minimum. Also, harvest of most species was good and hunter success satisfactory.

In light of this experience, the 1961 season will follow the same general pattern of two opening dates and, with but minor exceptions, will be quite similar to the 1960 season.

The season on forest game species—grouse, woodcock, squirrel and raccoon, will open throughout up-state New York on October 9. This opening date will apply also for all small game, except varying hare, in certain northern counties (see map). Farm game species—pheasant and cottontail, will open October 23.

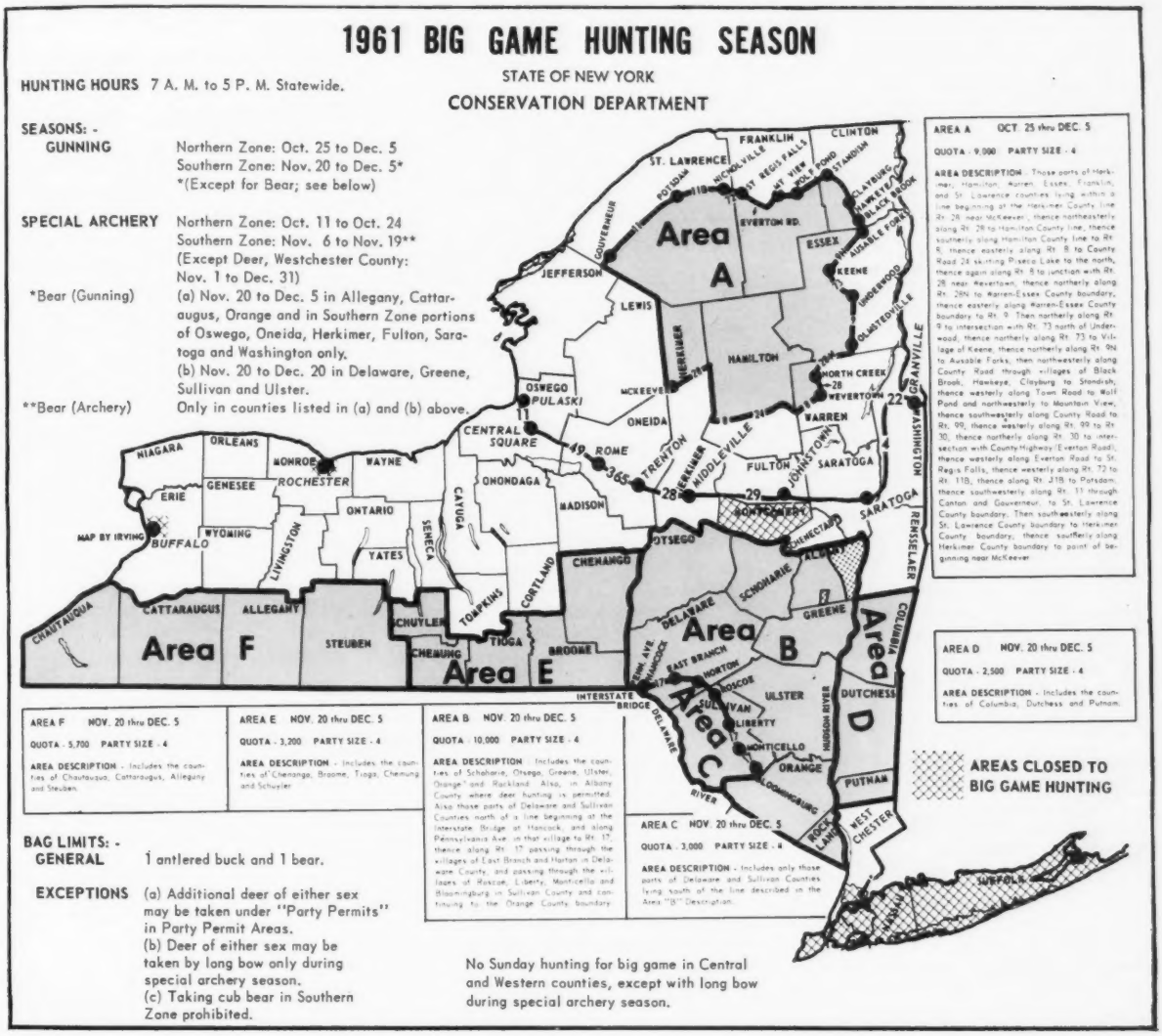
The variations from the 1960 season and the reasons for them are as follows:

1. The raccoon season opens with that on forest game species rather than with farm game species. Raccoon are numer-

(*Continued on page* 14)

Big Game Season – 1961

N. Y. S. Conservation Department


1961 BIG GAME HUNTING SEASON
STATE OF NEW YORK
CONSERVATION DEPARTMENT
HUNTING HOURS 7 A. M. to 5 P. M. Statewide.
SEASONS: -
GUNNING
Northern Zone: Oct. 25 to Dec. 5
Southern Zone: Nov. 20 to Dec. 5*
*(Except for Bear; see below)
SPECIAL ARCHERY
Northern Zone: Oct. 11 to Oct. 24
Southern Zone: Nov. 6 to Nov. 19**
(Except Deer, Westchester County: Nov. 1 to Dec. 31)
*Bear (Gunning)
(a) Nov. 20 to Dec. 5 in Allegany, Cattaraugus, Orange and in Southern Zone portions of Oswego, Oneida, Herkimer, Fulton, Saratoga and Washington only.
(b) Nov. 20 to Dec. 20 in Delaware, Greene, Sullivan and Ulster.
**Bear (Archery)
Only in counties listed in (a) and (b) above.
BAG LIMITS: -
GENERAL
1 antlered buck and 1 bear.
EXCEPTIONS
(a) Additional deer of either sex may be taken under "Party Permits" in Party Permit Areas.
(b) Deer of either sex may be taken by long bow only during special archery season.
(c) Taking cub bear in Southern Zone prohibited.
No Sunday hunting for big game in Central and Western counties, except with long bow during special archery season.
AREA A OCT. 25 thru DEC. 5
QUOTA - 9,000 PARTY SIZE - 4
AREA DESCRIPTION - Those parts of Herkimer, Hamilton, Warren, Essex, Franklin, and St. Lawrence counties lying within a line beginning at the Herkimer County line Rt. 28 near McKeever; thence northeasterly along Rt. 28 to Hamilton County line; thence southerly along Hamilton County line to Rt. 8; thence easterly along Rt. 8 to County Road 24 skirting Pixeia Lake to the north, thence again along Rt. 8 to junction with Rt. 28 near Newtown, thence northerly along Rt. 28N to Warren-Essex County boundary, thence easterly along Warren-Essex County boundary to Rt. 9. Then northerly along Rt. 9 to intersection with Rt. 73 north of Underwood, thence northerly along Rt. 73 to Village of Keene, thence northerly along Rt. 9N to Ausable Forks, then northwesterly along County Road through villages of Black Brook, Hawkeye, Clayburg to Standish, thence westerly along Town Road to Wolf Pond and northwesterly to Mountain View, thence southwesterly along County Road to Rt. 99, thence westerly along Rt. 99 to Rt. 30, thence northerly along Rt. 30 to intersection with County Highway Everton Road, thence westerly along Everton Road to St. Regis Falls, thence westerly along Rt. 72 to Rt. 11B, thence along Rt. 11B to Potsdam, thence southwesterly along Rt. 11 through Canton and Gouverneur, to St. Lawrence County boundary. Then southeasterly along St. Lawrence County boundary to Herkimer County boundary, thence southerly along Herkimer County boundary to point of beginning near McKeever.
AREA D NOV. 20 thru DEC. 5
QUOTA - 2,500 PARTY SIZE - 4
AREA DESCRIPTION - Includes the counties of Columbia, Dutchess and Putnam.
AREAS CLOSED TO BIG GAME HUNTING
AREA F NOV. 20 thru DEC. 5
QUOTA - 5,700 PARTY SIZE - 4
AREA DESCRIPTION - Includes the counties of Chautauqua, Cattaraugus, Allegany and Steuben.
AREA E NOV. 20 thru DEC. 5
QUOTA - 3,200 PARTY SIZE - 4
AREA DESCRIPTION - Includes the counties of Chenango, Broome, Tioga, Chemung and Schuyler.
AREA B NOV. 20 thru DEC. 5
QUOTA - 10,000 PARTY SIZE - 4
AREA DESCRIPTION - Includes the counties of Schoharie, Otsego, Greene, Ulster, Orange and Rockland. Also, in Albany County where deer hunting is permitted. Also those parts of Delaware and Sullivan Counties north of a line beginning at the Interstate Bridge at Hancock, and along Pennsylvania Ave. in that village to Rt. 17, thence along Rt. 17 passing through the villages of East Branch and Hortan in Delaware County, and passing through the villages of Roscoe, Liberty, Monticello and Bloomingburg in Sullivan County and continuing to the Orange County boundary.
AREA C NOV. 20 thru DEC. 5
QUOTA - 3,000 PARTY SIZE - 4
AREA DESCRIPTION - Includes only those parts of Delaware and Sullivan Counties lying south of the line described in the Area "B" Description.
Area A
Area B
Area C
Area D
Area E
Area F
MAP BY IRVING
BUFFALO
ROCHESTER
ALBANY
SARATOGA
SUFFOLK
ST. LAWRENCE
FRANKLIN
CLINTON
ESSEX
JEFFERSON
LEWIS
HERKIMER
HAMILTON
WARREN
WASHINGTON
OSWEGO
ONEIDA
MADISON
ONONDAGA
CAYUGA
SENECA
ONTARIO
WAYNE
MONROE
ORLEANS
NIAGARA
ERIE
GENESEE
WYOMING
LIVINGSTON
YATES
STEUBEN
ALLEGANY
CATTARAUGUS
CHAUTAUQUA
SCHUYLER
CHEMUNG
TIOGA
BROOME
TOMPKINS
CORTLAND
CHENANGO
OTSEGO
DELAWARE
SCHOHARIE
GREENE
COLUMBIA
RENSSELAER
SARATOGA
FULTON
MONTGOMERY
SCHENECTADY
ULSTER
SULLIVAN
ORANGE
DUTCHESS
PUTNAM
WESTCHESTER
ROCKLAND
NASSAU
INTERSTATE BRIDGE
DELAWARE RIVER
HUDSON RIVER
CENTRAL SQUARE
ROME
TRENTON
MIDDLEVILLE
JOHNSTOWN
GLOVERSVILLE
NORTH CREEK
WEVERTOWN
MCKEEVER
POTSDAM
NICHOLVILLE
ST REGIS FALLS
SARANAC LAKE
TUPPER LAKE
EVERTON RD.
GOUVERNEUR
CLAYBURG
BLACK BROOK
AUSABLE FORKS
KEENE
UNDERWOOD
OLMSTEDVILLE
ADIRONDACK
GRAY
EAST BRANCH
HORTON
ROSCOE
MONTICELLO
BLOOMINGBURG
NEW YORK AVE.
HANCOCK

THE big game season for 1961 will be similar to the 1960 season. A party permit deer season will be held in all areas that were open to it in 1960. But in addition, it will be extended to include seven additional Southern Tier counties. All told, there will be six areas open, each having a separate quota, but with party size in all areas set at four.

Basis for the party permit season is, of course, to increase the deer take in certain areas where, because of various biological reasons, more than a buck season is needed. In the Central Adirondacks where deer have to spend the winter on only 12 to 20 per cent of their total range — already severely overbrowsed — the possibility always exists that a severe winter will result in tremendous starvation losses. This fall, however, because of the mild 1960-61 winter which brought little snow to this area, deer should be more numerous than in either 1959 or 1960, even though no range improvement has taken place. Thus, an anterless season has to be provided for this Central Adirondack area.

In the northern Catskills and Southern Tier counties the herd is generally healthy and highly productive. To perpetuate this condition and to prevent range damage, additional harvest as provided by the party permit system is needed. In the Southern Catskills starvation was severe last winter, yet populations are still high and range deterioration is apparent. High numbers of deer in the Taconic area are causing range and crop damage although serious starvation has not appeared yet. Thus, these areas also need the party permit season to provide the additional take we feel is needed to

(*Continued on page* 14)

Small Game Season—1961

(*Continued from page* 12)

ous and cause much damage to farm crops, particularly corn. The price of their fur is low and the species is subject to rabies. Because of this many would like to have them removed from the protected list. Nevertheless, they are considered a valuable resource. They provide great sport for a small army of 'coon hunters and their hounds. Accordingly, to afford more hunting opportunity, we have opened the raccoon season earlier to coincide with the forest game species.

2. Varying hare can be hunted during the deer season in the Northern Zone, October 25 through December 5, without the use of dogs.

This is permissable as a result of legislation passed during 1961. It is wise to take advantage of this legislation now while populations are still high for the species is cyclic and therefore such opportunity is afforded only in peak years.

3. The season in Warren County, except for the Town of Queensbury, opens with other northern counties October 9.

Warren County is, basically, an Adirondack county and, except for the Town of Queensbury, little farm game habitat exists. Thus, it is logical to open the season here with other northern counties. However because of the farm game habitat in the Town of Queensbury, undesirable hunting pressures would result if the pheasant and rabbit season opened early. To prevent this an October 23 opening for pheasants and cottontails applies to this Town.

4. Hen pheasants may not be hunted in Oneida County, while Otsego County is added to those counties in which hen pheasants may be taken.

The law permits the Department to declare an open season on hen pheasants when such season will result in better management and not be harmful to natural production. These two counties, along with many others, are borderline situations as far as pheasants are concerned. Some good range, where natural production can be expected, exists along with poor range, where natural production cannot be expected. The taking of hen pheasants cannot be considered as wholly detrimental or beneficial—thus public sentiment is logically the deciding factor and governed this decision.

5. Woodcock may be hunted on Long Island beginning October 9.

The Federal government prescribes the length of the woodcock season for the State, 40 days for 1961, with no zoning permitted. An early opening is essential to provide woodcock hunting in northern areas. If the woodcock season opened with other small game on Long Island November 1, which is the date prescribed by law for the opening of the pheasant season on the Island, woodcock hunters would enjoy only a 17-day season. In order to permit them the maximum woodcock hunting opportunity we have opened the season for them on Long Island October 9.

6. There will be no zone line in Herkimer County.

The zone line in Herkimer County had little value for there is little or no pheasant and cottontail range in the northern part of the county. To simplify regulations, therefore, the line has been removed.

7. Sunday hunting of pheasants will be permitted in Essex and Putnam counties as well as those counties in which pheasants could be hunted on Sunday in 1960.

This was requested by the sportsmen in both Essex and Putnam counties. The necessary legislation authorizing this was enacted into law during 1961.

8. By statute, hunting hours will be from 7 A.M. to 5 P.M. prevailing time including opening day.

As we go to press a turkey season in Chautauqua, Cattaraugus, Allegany and Steuben counties has been declared. It will be from October 23 through October 27 with a one bird season limit. The opening of the turkey season in Chautauqua and Steuben counties for the first time is based on field surveys which indicate populations are adequate to support a season.

Small game populations appear to be satisfactory so you should have good hunting in 1961.

Enjoy yourselves, be sportsmen—and good luck!

Big Game Season—1961

(*Continued from page* 13)

maintain a healthy herd.

In the Southern Zone five separate areas, each having its own party permit quota, have been set up, in order to spread out and better direct the hunting pressure. If only one area was set up, with one quota to cover the total area included in the five separate areas some localities would receive great concentrations of hunters while other areas would have little or no hunting.

We know there are those, particularly in the Adirondacks, who disagree with our recommendation for greater harvests. But as we have tried so long to make clear, our objective is to perpetuate the deer resource so that the sport of deer hunting may be successfully enjoyed in New York State for generations to come. We know, too, that our critics have this same objective. We simply ask for their confidence so we can do the job they are paying us to do. I am sure such confidence will be rewarded by accomplishing the common objective.

The accompanying map provides the details of this year's party permit season including area descriptions and quotas. A total of 33,400 permits will be issued permitting 133,600 hunters to participate.

Hunters interested in participating in a party permit hunt should plan to buy their big game license as early as possible as permits will again be issued on a first come, first served basis. It would be well for those desiring to hunt areas C and D to make contacts with landowners before applying for a permit in order to be sure of having a place to hunt. Complete instructions for making application for the party permit will be available with the application forms at the license issuing agents.

Basic dates for the 1961 big game seasons are October 25 through December 5 in the Northern Zone and November 20 through December 5 in the Southern Zone. Special post-season seasons may be held in specific areas of the State, but have not yet been determined.

In all counties having a gunning season, the special archery season will prevail during the 14 days prior to the opening of the regular big game season: October 11 through 24 in the Northern Zone, and November 6 through 19 in the Southern Zone. The Westchester County archery season will run from November 1 to December 31, but a second deer *will not* be permitted this year.

The bear season in the Northern Zone will run concurrently with the deer season for this zone. In the Southern Zone, bear can be hunted from November 20 to December 5 in Allegany, Cattaraugus and Orange counties, and in the Southern Zone portions of Oswego, Oneida, Herkimer, Fulton, Saratoga and Washington counties. The Sunday exception applies to Allegany, Cattaraugus, Oneida and Oswego counties. In Delaware, Greene, Sullivan and Ulster counties the bear season will run from November 20 to December 20.

There it is for '61, be sure of your target.

Streptothricosis

—A New Deer Disease Transmissible to Man*

by Donald J. Dean, D. V. M., M. S.,
Assistant Director in Charge,
Laboratories for Veterinary Science and Meat Hygiene,
N. Y. S. Department of Health

IN December, 1960, while operating a deer check station, C. W. Severinghaus, Supervising Wildlife Biologist, of the New York State Conservation Department, observed that a 5½-month-old deer taken in the Town of Crawford, Orange County, was diseased and submitted it to Griffin Laboratory, a branch of the New York State Health Department's Division of Laboratories and Research at Slingerlands. The staff at Griffin Laboratory, including James Reilly, a Wildlife Research Pathologist, assigned by the Conservation Department to work on problems related to public health, and Edward Kroll, Laboratory Technician, recognized that the deer's lesions were unusual and took immediate steps to determine the cause of illness.

Deer hunters should not be overly apprehensive about this disease. Streptothricosis, while affecting both wild and domestic animals on other continents, has not been reported before on this continent in wildlife and only rarely before in domesticated animals. —Editor

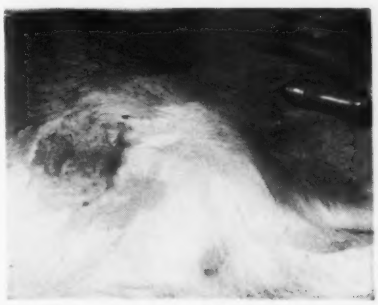
The Disease in the Deer

The deer was emaciated. Chronic skin infection was present on all limbs below the knees and hocks but was most severe below the fetlock and on the right hind leg. The infection consisted of single or multiple raised whitish boils of pinhead to matchhead size containing cloudy fluid or whitish yellow pus. Older portions, frequently run together, were covered by a brownish scab which was tufted above the skin. The area between the toes extending from the coronary band to the fetlock on the right hind leg was involved extensively, with the skin on the inner surface of the leg completely denuded. Scattered little boils were observed on the flanks, back and neck and pus was noted throughout the skinned parts from the hoof to the hip. The skin around the nostrils was involved extensively. Inner organs were not available for examination.

A fungus-like organism was grown from selected pustules on the right hind leg. The agent was subsequently identified as Dermatophilus sp. by Dr. Morris Gordon, Senior Research Scientist, of the Health Department. Incidentally, the term Dermatophilus means "lover of skin." This organism widely affects both wild and domesticated animals in Africa, Asia, Australia, Europe and South America where it is known by various names including Streptothricosis, Strawberry Foot Rot, Lumpy Wool Disease, etc. It had not previously been reported on this continent from wildlife and only once before, in Texas, from domesticated animals.

The Disease in Man

Important as this discovery was, it is probable that our story would end here except that it was soon learned that four of the ten persons who handled the deer developed boils on the dorsal surface of one or both hands two to seven days later —the two who shot and dressed the deer and two employees of the Conservation Department who examined and transported it to the laboratory. The person who dressed the deer developed little boils on the right forearm in addition to those on the hands. The infection consisted of multiple (2 to 25) nonpainful whitish pimples from 2 to 5 mm. in diameter, containing water fluid or a bead of pus and surrounded by a reddened halo (*Figure 1*). When they were ruptured or opened a raw reddish crater was observed. There was no evidence of spread or fusion and, except for two pustules, all appeared within forty-eight hours. The lesions remained active from three to fourteen days and appeared to heal with or without treatment but more rapidly if the pus was expressed. As the boils healed, a brownish scab formed which persisted from a few days to a week, followed by a reddish-purple scar. Generalized illness was not observed and no cases developed among the nine household contacts of the four infected persons.



Rash-like lesion on deer's flank

Lesions in man

The same organism isolated from the deer, Dermatophilus sp. was recovered on one or more occasions from the unbroken pustules of two of the four persons who developed the infection. The organism was not isolated from the scab of one person whose infection had healed or from another from whom the single discharging boil cultured was heavily contaminated with bacteria. The fungus recovered is very close to Dermatophilus congolensis. Since the species of this genus are not sharply defined, a critical comparison of the present organisms with others from other continents is required before an accurate identification as to species can be made. This is believed to be the first time that Dermatophilus sp. has ever been isolated from man, thus adding yet another disease to the *Zoonoses* or the diseases of animals transmitted to man.

The Experimental Disease

Infections were induced in deer, sheep, calves, rabbits, mice, one horse and one goat inoculated either in the skin (intradermally) or on the unbroken or

(*Continued on page* 34)

*Streptothricosis: "A New Zoonotic Disease." Dean, D.J., Gordon, M.A., Severinghaus, C.W., Kroll, E.T., and Reilly, J.R. *New York State Journal of Medicine*, 1961, *61*, pp. 1283-1287.

The Farmers' Museum at Cooperstown

—A Journey Into History

by Steve Trimm

HAVEN'T you wished, reading about the pioneer days in this country; about the woodsman, the hunters, the trappers; about the courage and ingenuity of our ancestors who worked and fought for survival in this new land—haven't you wished that you could turn the clock back, even for a little while, to see just how they lived? If only, as in the science fiction stories, there was a time capsule into which you could climb and whisk back a hundred and fifty years!

Well, there is—created for you by the New York State Historical Association in the beautiful, wooded hills on the shores of Otsego Lake. Here, just north of the Village of Cooperstown, the farmers' Museum opens its doors for your journey into history. So come on along, let's see how the people lived in this land during the early 1800's, the houses they built for shelter, the clothes and boots which they fashioned by hand, the crude yet ingenious tools which they used to wrest a living from the forests, the lakes and streams, and from the soil—for these people lived close to nature, dependent upon the natural resources around them in a very real and immediate sense.

The Trappers

Let's walk first up this woodland trail to the trapper cabin, a replica of the rough shelters built by that hardy clan —the first of the white men to push westward during the late 1700's and early 1800's.

The trapper, when he pushed into the wilderness, had only what he could carry in pack or canoe. He brought basic tools including axe, adze, pots and pans, traps and if he was lucky, a stovepipe for the cabin he would build. The rest of his needs he made from raw materials at hand.

In the construction of his cabin, the trapper used pine, spruce or cedar logs which were strong and plentiful, chinking them with clay and moss. He made the roof of smaller sections of the same kind of lumber, over which he laid pieces of hemlock bark, placed in such a way

1—Trapper's cabin—interior view
2—Home-grown tobacco drying
3—Clay-insulated stovepipe
4—All-purpose iron kettle
5—Stone fireplace
6—Twig broom
7—Firewood for heat and cooking
8—Wooden spoon
9—Birch bark cup
10—Bear trap with toothed jaws
11—"Cased" raccoon skin. 'Coon skins were usually stretched flat
12—Beaver pelt on tree limb hoop
13—Deer, a major source of food and other essentials
14—Iron cleaver used for butchering
15—Meat on a spit
16—Wooden barrel
17—Bladders of animals used as storage containers for honey and other fluids
18—Skins were made into footwear and clothing
19—Skins were sometimes made into buckets, tightly laced and top-rolled
20—Deer feet and antlers often used as knife handles
21—Animal fat was melted and used for lamp fuel
22—Spearing fish at night from dugout canoe
23—Light was furnished by wood and bark burning in a cresset (iron basket) on the bow of the canoe
24—A simple tip-up for ice fishing
25—Another tip-up rig
26—A four-pronged fish spear
27—Drop net used for smaller species of fish

as to prevent rain from seeping into the cabin. The one-roomed structure was furnished with a rough pine table and seats. In one corner of the room was a bunk covered with a fur robe, often a bear skin. Balsam boughs served as his mattress. Generally there were windows in the cabin, covered with parchment or oiled paper. Opposite the bed was a stove made of clay and stone. Then came his prize—the stovepipe—fitted through the cabin wall, with clay packed around it for insulation. At the entrance, a heavy door of rough planks hung from hinges of leather.

To be comfortable in his cabin the trapper made use of many materials. Eating utensils were carved, principally from ash. A piece of birch bark tied in circular fashion with a wooden circle for a base, or folded and laced, made a cup or portable container. Metal objects were sometimes bought but could be made of bog iron found in swamps. Easy to mold, it was fashioned into axes, planes, kettles, frying pans, spikes, adzes, chisels and the like. Mallets, on the other hand, were made of heavy poplar and were useful for driving posts. Torches were often needed and consisted of rushes, birch bark or pine knots. Birch bark burned brightest but very quickly. Barrels were made entirely of wood, even down to the hoops. Thatch baskets were common in and around the cabin and were used to haul odds and ends the trapper needed. For a large water container, he simply hollowed a tree stump and put a lid on it.

Every now and then the trapper wanted to clean his cabin so he needed a broom. This was a simple thing to make, taking only a few minutes. He used a small sapling with twigs tied to one end. Tied? Yes, with homemade rope of ash underbark which could be twisted or braided into strong cord. If the trapper had an urge for baked goods he could begin the process of grinding the coarse grains with a stone mortar and pestle.

That was the trapper's cabin, but he didn't stay there all the time. In winter he needed snowshoes for long trips overland. These were hoops of wood with oiled rawhide stretched across the frame for webbing. They were somewhat sticky and picked up snow but were satisfactory. For water transportation at other times of the year the trapper probably had a dugout canoe or one made of cedar or birch bark which had room in it only for himself, furs and a few essentials.

The trapper was not limited by conservation laws or the methods of taking game as we now know them. Many of his practices would be illegal today, but he was guided by an even more basic law—survival. Rough as they were, he made use of materials he found, and learned to live with the land.

The Pioneer Farmer

But our trapper is a restless man; an adventurer. Civilization is pressing too close, so once again he gathers together his simple tools to travel west into the wilderness. So let's turn to those who followed him into the new land—the farmers. Their homes, although often larger than those of the trappers, made use of the same natural materials. After the farmer's house was finished and shelter arranged for his livestock, he made sure of a constant water supply. If there were not a nearby spring or stream, he dug a well and set up a pump. This was made entirely of wood as were the buckets for carrying water. If he had time, the farmer could make a water main from hollowed logs and, after a year or two, could construct pipes in which even the joints were made of wood. Wooden reamers helped in this job.

Having assured a water supply, the pioneer farmer planted crops on the land he had cleared. To turn the soil he used a hand-made wooden plow, tipped with iron. The more fortunate had a yoke of oxen to pull his plow and other farm equipment. The harrow, which fitted the soil for planting, was made of wood in the shape of a 'V', each arm holding six-inch iron spikes. Grain was planted by hand, then the land roller was used. Made of two large axled logs, it packed

earth around the seeds. Corn, oats, rye, buckwheat, beans, peas and pumpkins might be planted in this manner. Apple trees were planted too, for apples could be eaten raw, dried, baked into pies and cakes or made into apple cider. Corn could be eaten from the cob, dried, pounded into meal or made into whiskey. There were varied uses for nearly everything the farmer raised and harvest time, when produce was gathered and stored for winter, was an important event in the farmer's year.

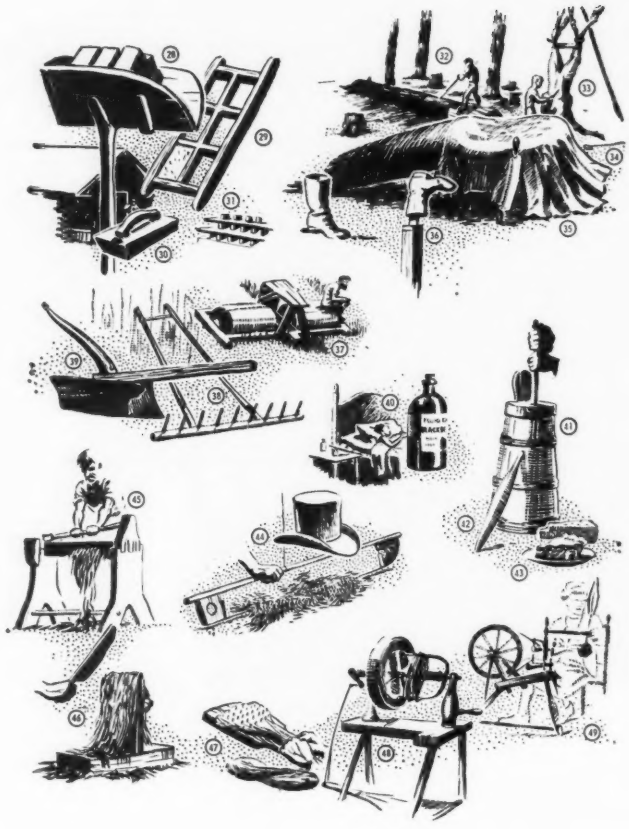
If the pioneer had no cow, it was one of the first things he bought when he was able, for he needed the milk supply all the time, and the animal for beef if times got really hard. He also needed sheep for meat and wool, and pigs for pork. Wild animals could not always be depended upon for meat supplies which were smoked, cured, salted, pickled, dried or made into sausage. (Some pioneers had a sausage-making machine which was made of wood with small metal parts). Dried meat was called jerky or charquir. Both wild and domestic animals supplied many items for the pioneer farmer. Bladders were used as containers for honey or oil, intestines made sausage containers. Animal fats provided lard, cooking oil, materials for making soap and candles. Horns were used for making cups, spoons, combs, lanterns, bugles and containers. Antlers served as husking pins, awls for leather work, tool handles and hangers. Hoofs were made into glue or leather dressing. Pelts became vest, coats, blankets or robes. Hides found use as shoes, clothing, harness, chests, bags, saddles, snowshoes, ropes, thongs, parchment and bellows. Conservation, in the modern sense, was not a conscious practice of the pioneer farmer but in order to survive he made wise use of the things he had and wasted very little.

The farmer's wife, probably more often than the trapper, wanted a clean house. The farmer grew a special type of corn, called broom corn, for this purpose. Hand-made corn brooms could be bought for around six cents in any New York village until about 1840. Craftsmen who made the brooms seldom took money from the farmer who brought materials. Instead payment was taken in brooms, which were sold to villagers who did not raise broom corn.

Maple sugar and honey were the only sweets the pioneer farmer and his family had. Nearly all equipment used in maple tapping was made of wood. The funnel driven into the sugar maple was a small hollowed tree limb. The bucket hanging from this spout was made of wood. A yoke used for carrying the buckets was made of hard wood and the hooks which held the sap buckets were little more than bent twigs. Bees were discovered in the wild, but if the farmer succeeded in capturing a swarm, he set up beehives for them. Such hives resembled overturned baskets. Although it took much effort to obtain sugar and honey, and results were often poor by our standards, the early farmer considered it worthwhile.

Herbs and spices were important to the pioneer family for they helped preserve food, and made it taste better. Foods treated with herbs or spices, then dried, helped feed the frontier family. Together with a supply of water and food, such a family had to plan for possible sickness and have some medicines on hand. Since such things could not be bought, they had to be made. Folk medicine, as it is now called, consisted mainly of spruce beer, birch sap and wild greens. Bark, leaves, fruits, roots and their extracts were all used. Surprisingly enough, these crude medicines occasionally worked. When they didn't, and the unfortunate one was buried, native grasses, groundpine and everlastings formed a commemorative wreath.

But, to get back to the family of the pioneer farmer. How did they provide their clothing and fabric for other uses?



28—Wooden hod
29—Brick mold with one brick in place
30—Brick clay packed in mold
31—Air drying the bricks, before firing
32—Stripping hemlock bark for use in tanning leather
33—Cattle were stunned with pole-axe
34—Butchering and skinning
35—Skin "fleshing" tool; preliminary to tanning
36—Leather was and still is an important part of our economy
37—Log roller for compacting soil
38—Wooden rake
39—Metal-pointed wooden plow
40—Medicines were often made of herbs, fruits, etc.
41—Butter was hand churned
42—Beautifully shaped ladle used with butter and cheese
43—Apple pie and cheese—an American tradition
44—Beaver hat
45—Processing flax
46—Swingling or scutching of flax
47—Hetchelling flax
48, 49—Flax was then spun into linen thread

They made it, often from the linen provided by flax. After a long process of planting, harvesting, soaking, breaking and spinning, the thread was ready for weaving. Shearing, carding and spinning raw wool resulted in wool yarn, which could also be woven. The loom, made of wood, was used mostly in the winter when the summer's supply of thread and yarn was ready. Pioneer wives weren't satisfied with plain, uncolored fabric, so they made their own dyes. Black walnut hulls, sumac berries, alder bark, goldenrod, apple bark, butternut hulls, tea leaves, indigo, cochineal, cutch, logwood and onion skins were used for coloring.

The pioneer farmer was also a hunter. He hunted deer for meat, skin and antlers. He hunted ducks for meat and feathers. A feather bed and pillow was appreciated after a hard day. In this type of hunting, decoys were often used and, although hand-carved and somewhat crude, they were as effective as those we have today. Although the farmer killed only what he needed, market hunters with large-bore muskets killed millions of wild fowl. Smooth-bore muskets came into use with ammunition of birdshot, buckshot or ball. Each load had a specific purpose.

Fishing was a favorite and profitable pastime. A man's boat was probably a hand-made canoe or dingy. In the early 1800's, fishermen took advantage of log-buoys—logs fastened to the bottom of a lake with only the tops showing. Such a buoy could serve as a large anchor. At night fishermen used bright-burning lights called cressets, made from metal boxes or baskets filled with bark and pine knots. Winter was a time for ice fishing. Equipment consisted of axe or spud, ice creepers, tip-up lines and bait. Spears were used in both summer and winter.

50—Wooden water trough
51—Pumps
52—Wooden water pipe
53—Maple sap bucket and spigot
54—Trees were cut and hollowed out for barrels
55—Wooden pitch fork
56—More elaborate, coopered barrel
57—Wooden shovel
58—Wooden water bucket
59—Whittled wooden broom
60—Broom corn
61—More modern broom
62—Wooden vise
63—Baskets were woven over a wooden frame
64—Wooden splint basket
65—Basket-type bee hive

The Village

But our farm family was not alone. Others came to clear the land nearby, and soon there was a place for craftsmen: specialists who were clever at making better tools than the farmers could make for themselves, shopkeepers and finally doctors, teachers and even lawyers —and communities were born. Let's visit the Museum's village crossroads and see what was going on from 1783 to 1840 or thereabouts. First we find the brick makers, for brick houses began to replace houses made of wood. Clay was used for the making of bricks, and sometimes when clay was being fired, sand particles in it would fuse and turn to glass. This had a pretty effect and was much in demand. Clay was also used for pottery which soon came into general use.

Other industries appeared as the population increased and demand became regular. One which developed rapidly was the iron industry. Bog iron, such as the trapper used, was in good supply, although New York bogs were not as productive as the one in Virginia which produced 300 tons a year for sixty years. But there was enough native iron for needs of the time and the industry turned out many items that were useful, and some that were decorative.

The beaver-hat trade was important in New York. One of the reasons the Dutch settled here was the abundance of beaver. Beaver pelts could be made into fine hats and there were many pelts to be had. As long as the beaver survived this industry continued.

The lumber industry also grew and there were many woodworking craftsmen—carpenters, cabinet-makers and coopers. The cooper, now a limited and specialized workman, once held an important place in the community for he made all sorts of wooden containers—kegs, casks and barrels. Wood could be used for almost everything and there was a good supply.

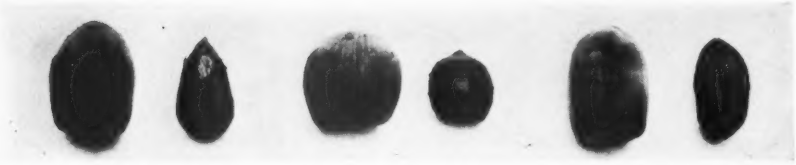
But now your path leads on—past the village smithy where horses were shod, and where on ringing anvil and in showers of molten sparks, iron was wrought into hundreds of useful forms for the pioneer farmers and their families. Past the printing shop with its trays of type and the old hand-operated press; past the doctor's office, and the lawyer's; past the apothecary's shop, and to the little one-room schoolhouse where desks are carved with the initials of stu-

(*Continued on page* 34)

Hazelnuts

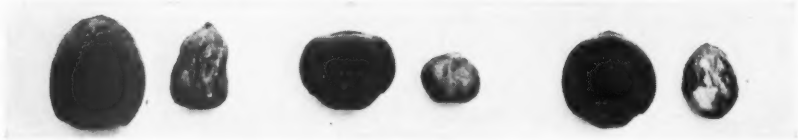
—A Handsome Ornamental With a Bonus for Wildlife

by Dr. George L. Slate,
N. Y. S. Agricultural Experiment Station, Geneva



1. *Italian red filbert*
2. *Barcelona*
3. *Kentish cob*

4. *Red Lambert*
5. *Cosford*
6. *Bixby*



7. *Buchanan*
8. *Winkler*
9. *Rush*

THE hazelnuts, or filberts, as the cultivated varieties of the European hazel are often called, are useful nuts for wildlife as well as man. The European filbert is grown commercially in Oregon and Washington, where the industry has been expanding rapidly. The native hazelnuts are not grown except for a few plants of the American hazel, *Corylus americana*, in the collections of nut-tree specialists.

Van Dersal notes that stomach records and observations show that hazelnuts are eaten by grouse, bobwhite, ring-necked pheasant, blue jays, squirrels, moose, white-tailed deer and beaver.

The native hazels, *C. americana*, the American hazel, and *C. cornuta* (*rostrata*), the beaked hazel, are well able to take care of themselves in the wild. The plants sucker freely and make dense thickets. However, they are not especially productive in comparison with the European filbert which makes a much larger shrub, or even a small tree if the suckers are removed, and growth is limited to a single stem. The nuts of the European species are much larger and much more desirable for use by man.

Another species, the Turkish hazel, *C. colurna*, makes a fairly large tree and is well worth planting as an ornamental tree. The small, thick shelled nuts are taken by the squirrels, but as the trees do not come into bearing until they are 12 to 15 years of age and may fruit only in alternate years, they are less valuable as game food than plants that produce annual crops at an early age. Nevertheless, they are a fine tree with the nuts as a bonus.

All of these hazels are taken by the squirrels; in fact, where they are abundant, they usually get most of the crop. Blue jays also harvest the nuts long before they are mature.

The European filbert, *C. avellana*, while much superior to the native hazels for nut production is not as winter hardy as is desirable, and in severe winters, or unusually mild winters may experience considerable winter injury. The catkins are killed so that no nuts are produced, or the wood may be injured in varying degrees from slight twig killing to killing of the plant to the ground, or snow line.

The filbert varieties vary greatly in hardiness of catkins and the wood. A test of 120 varieties of filberts at the New York State Agricultural Experiment Station from American, English, French and German sources showed that several of the German varieties are distinctly hardier than varieties originating elsewhere. These hardy varieties originated in the colder parts of Germany during

A large hazelnut, Corylus colurna, *Highland Park, Rochester, N. Y.*

the middle of the last century when many seedlings were raised by German growers.

The European filbert is also susceptible to the Eastern hazel blight caused by a fungus, *Cryptosporella anomala.* It occurs on the native American hazel where it does little damage, but it can be very destructive to the European filberts. In the past, many filbert plantings have been destroyed by it.

Various breeders have crossed the native American hazel with the European filbert with the object of combining the blight resistance and tolerance of the native hazel with the desirable nut characteristics of the European species. The late J. F. Jones of Lancaster, Pa. disseminated a number of the better selections from this cross which are known as Jones' Hybrids. From his work Bixby and Buchanan were named. Two varieties, Potomac and Reed, have resulted from crosses made by the United States Department of Agriculture. From about 2,000 seedlings fruited at the New York State Agricultural Experiment Station, Geneva, 40 selections were made and are now under test to determine their merits for possible introduction as varieties.

The seed crops from the original 2,000 seedlings, as well as the named varieties, were turned over to the Soil Conservation Nursery at Big Flats, N. Y. to be grown and distributed for planting in suitable areas.

More recently, the New York State Conservation Department has received the seed crops, but these have been small as the older trees were removed and the new planting is not fruiting heavily.

The crops produced by the seedling trees varied considerably in amount, but many of the trees were productive. In fact, so many bore satisfactory crops that the use of seedlings for producing nuts for wildlife is probably better than the use of layered trees. Seedlings are easily and cheaply raised in large numbers, but layered trees are more difficult and much more expensive to produce in the quantities needed for extensive wildlife plantings.

For nut production the characteristics of tree and catkin hardiness assume greater importance since the seedlings vary enough to make it worth while to propagate the best as clones. Nut characteristics of importance are size of kernel, freedom from pellicle and flavor. Some varieties and seedlings have a much higher percentage of "blanks," unfilled nuts, than others. Barcelona, the principal variety grown in the West, has about 10 per cent of unfilled nuts at Geneva, but some selections fill much better.

The pellicle, or skin of the kernel, is much freer of fiber in the hybrids than with the pure European types. Moreover, it is lighter in color and more attractive in appearance. The husks in which the nuts are borne do not open and release the nuts with the American hazels as with the European varieties. It is important in commercial production that the nuts drop free from the husks, but for garden use it is less important, and the squirrels have no difficulty.

The hybrids at their best can produce heavy crops of nuts annually, but their limitations must be noted as disappointments are certain to occur.

The hybrids so far raised are not iron clad in hardiness. Probably they should be grown chiefly in areas where peaches are winter hardy. A site protected from the full sweep of winter winds is desirable. The first plantings at Geneva were protected by fence row trees and buildings and were injured less by winter cold. Much heavier crops were produced. The present orchard was deliberately planted in an exposed situation in order to sort out the clones with maximum hardiness. The sorting has been more severe than was expected and crops have been lighter than with the older plantings. Wild American hazels should not be near the planting site as they may harbor the filbert blight fungus which may destroy many of the trees. A planting of several hundred trees near Ithaca was destroyed completely by this disease. The Station plantings have been free.

Bud mite is another hazard which reduces the crop, but does not destroy the trees. Seedlings should be free from this insect, but plants from old plantings or nurseries may be suspected of harboring this insect. A satisfactory miticide and correct timing of its application has not been discovered as yet.

The trees should not be planted in the woods where they are shaded by larger trees as full sunlight is necessary for good growth and nut production. The edges of woodland or valleys that provide protection from the full sweep of the prevailing winds are suitable sites. Warm southern slopes should be avoided as the trees start growth early and easily and can be injured by subsequent severe cold. Severe injury has occurred during mild winters.

The author examining a filbert tree

Catkins and hazelnuts, natural size

Some Water Birds of New York

by Dr. E. M. Reilly, Jr.,
Curator of Zoology,
N. Y. State Museum

OF all of our water birds in New York, the loons, grebes, rails, gallinules and coots are least well known. Considering their habitats—remote, wilderness lakes, for instance, in the case of the loons; to marshlands, where few people go, in the case of the rails, gallinules and coots, this is understandable—and a shame! It's too bad, because we think no one should be deprived of the opportunity to hear the wild, free cry of the loon from a mist-shrouded mountain lake deep in the wilderness. For then you know you have left civilization behind; you won't need to be told that this is the voice of the wild; that this is as it was long ago, before the white man ever was here. And while the grebes appear to be somewhat more tolerant of humans and the effects of civilization than the loons, they too are birds of the wild. As for the rails, gallinules and coots—marsh-dwellers, most of them pretty secretive about it too—most people, shunning marshes, never get to recognize them, much less to study their interesting ways or hear the weird assortment of clucks, squeaks, grunts and gurgles with which they talk to each other and perhaps discuss the affairs of their marsh-day lives. So, because of their shy natures, their secretive ways, their out-of-the-way habitats, and because they don't fall readily into other groupings of our water and shore birds, all of these birds stand a good chance of being overlooked. We shall try here, with these descriptions and with the accompanying centerspread paintings to remedy that situation, for these species add greatly to the beauty and interest of the world of nature around us.

The Loons

Loon is a word derived from old English *lumme* or *loom*, meaning awkward. And awkward they are—on land! With their legs placed far back, they get about on land with the utmost difficulty, giving the appearance of a dowager about to come a cropper. But it's doubtful that they spend any more time on land than absolutely necessary. Water is their world, and here there's not a more graceful, better adapted bird. They are swift and powerful divers and swimmers, having no difficulty in capturing fish which comprise the principal article of diet for all species. There are only four kinds of loons found throughout most of the North Temperate Zone and Arctic regions. All of these have been recorded in New York State.

The Common Loon (*Gavia immer*). This large bird (30-36 inches long) is found throughout the year in some parts of New York State, breeding in the Adirondacks and along Lake Champlain and wintering off Long Island and, more rarely, on large, open water lakes throughout the State. In the evening, or at the approach of a storm, the weird, loud and strident scream of the loon may still be heard these summers on almost any of the more remote lakes in the Adirondacks. Its "laughter" is a more mellow sound, a tremendous greeting through the early morning mists, a glad-mournful sound with its connotations of clean cool pine-scented air, restful companionship and soul-freeing vacations. There are dead-souled humans who shoot loons for "sport" and dead-eyed persons who mistake them for ducks. The experienced hunter and the sharp-eyed novice will note from Mr. Trimm's centerspread paintings that there is no duck quite like a loon with its longish pointed bill and black and white patterns. The majestic appearance, the sparkling white "necklace" on the velvet-black throat, the swift, arrow-straight flight, the eerie calls all combine to make the loon a favorite bird in some of our own folk-lore and that of the northern Indians and other primitive tribes.

Its two grayish-brown dark blotched and spotted eggs are laid in a nest close to the waters of the lake sometime from mid-May to early June. The downy young take to the water like ducks. In winter the Common Loon wears a gray-backed white-throated and white-bellied plumage and is distinguished at that time from the Red-throated Loon by its larger size, less white on the underparts, and by its heavier bill.

The Red-throated Loon (*Gavia stellata*). This smaller species (22-27 inches long) is seen in New York only in the Long Island region in winter or occasionally during migration in the rest of the State only when in its winter plumage as shown in the picture. Large "rafts" of this species may be seen off Long Island from late September to early April. It is often seen with the Common Loon. It breeds only in the Arctic and sub-Arctic regions. The **Yellow-billed Loon** (*Gavia adamsii*) and the **Arctic Loon** (*Gavia arctica*) have each been taken only once in our State.

Grebes

The grebes are diving birds also; sometimes called Hell-divers or Lobe-finned divers. Webster's unabridged says that grebe is a French word of uncertain origin. Where the loons have the webbing on the feet stretching between the toes, the grebes have broad lobes of webbing on the sides of each toe. Grebes are just as helpless on land as are the loons and for the same reason. They feed primarily on small fishes. Their stomachs are often found stuffed with their own feathers, for which no one, except a grebe, has ever found a good

reason. There are twenty species of grebes found throughout the world, five of which have occurred in our State.

Red-necked Grebe (*Podiceps grisegena*). Many bird books refer to this large species of grebe (19-23 inches long) as Holboell's Grebe, but the presently accepted name is much more descriptive—except, of course, in the winter and during migration. These are the only seasons in which we see the bird, so you'll have to take my word for it that it does have red on the neck in summer. It is now a common winterer off Long Island and an uncommon migrant elsewhere in the State.

Horned Grebe (*Podiceps auritus*). In winter and during migration this medium-sized grebe (13-15 inches long) looks like a much smaller edition of the Red-necked Grebe with much whiter appearing cheek patches. In late spring and summer both adults adopt the brighter plumage with conspicuous buffy "horns." Other names by which it has been known are Pink-eyed Diver, Dipper and Water-witch and, by any of these, is found throughout the State during migration and occasionally in summer.

Pied-billed Grebe (*Podilymbus podiceps*). This small grebe (12-14 inches long) is the most common of the group in the State. It is a common breeder and migrant throughout and may even appear in winter on occasion wherever suitable marshes and ponds occur. Its call, a resounding *cow-cow-cow-cow* slurring off at the end, is a familiar sound to the marshland visitors. Like all the other grebes and even the loons, it has the ability to force air from its plumage and air sacs while swimming and thus sink slowly deeper in the water. This bird is also known as the Dabchick, Hell-diver, Dipper, Didapper and Water-witch—you can see from these common names why the naturalists prefer scientific names! Two other grebes, the **Eared Grebe** (*Podiceps caspicus*) and the **Western Grebe** (*Aechmophorus occidentalis*), have been reported seen in the State.

Rails, Gallinules and Coots

The rails, gallinules and coots all belong to the rail family. One of the features they all have in common, despite appearances, is that they are all as thin as a rail. Rails have to be thin in order to squeeze through the thick growths of reeds and grasses in their marshland habitat. The gallinules, which have very, very long toes enabling them to walk on top of water vegetation, remain thin as rails probably to save weight. Coots have developed lobe-fins at the sides of their very long toes (all members of the family have very long toes) and spend much of their time swimming like a duck. In fact, hunting regulations list these birds with the ducks. They are fatter than most rails, which is still pretty thin. Food of this family consists of all kinds of water animals—mainly insects, worms, snails, frogs, and some seeds and vegetable matter.

Rails are shy and secretive, gallinules and coots much less so. It's pretty hard to be secretive while wearing bright plumages such as the gallinules. All of the rails in our State are perfectly capable of flight, but on some oceanic islands where there are no predatory land animals, rails have settled down and almost forgotten how to fly. Here, they use their wings to escape enemies almost as a last resort, and, of course, during migration. Gallinule is almost straight Latin meaning little hen or chicken; the birds are often called Moor-hens.

Coot is a word of uncertain origin; one of its meanings is "stupid" or "dull" but this may have been derived from someone acting dumb like a coot.

Marshlands, unsullied by heaps of man-made garbage, are really quite pleasant places. Where man has not upset the so-called balance of nature, marshlands are not pest-holes, as all forms of wildlife are kept in check by each others' activities—and this includes pests like the mosquitoes.

Drifting silently through such clean marshlands in a canoe or other boat one may be lucky enough to spot a rail quietly probing and searching for food. They are, however, more often heard than seen and although they do not make beautiful music the noises are often pleasing and rhythmic. In New York State we have recorded seven species of rails, two gallinules and one coot. The world-wide family, however, includes 132 species.

King Rail (*Rallus elegans*). A large reddish-brown rail (17-19 inches long) with a long medium-stout bill. It is not a common bird, but is a regular breeder in fresh-water marshes and may even remain through the winter where there are patches of open marsh water. Its "song" has been described as "a grunting" *umph umph umph umph*.

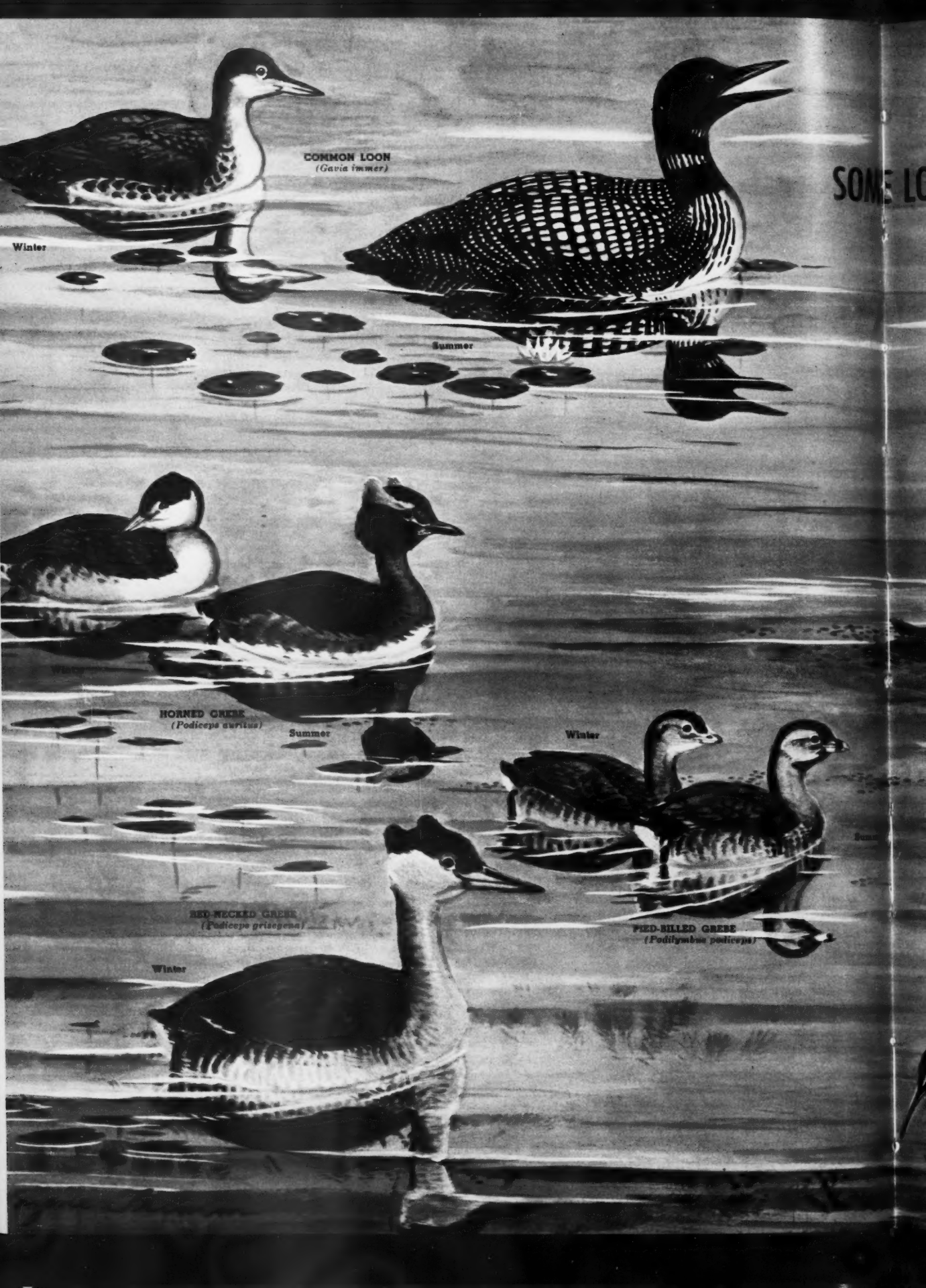
Clapper Rail (*Rallus longirostris*). Like the King Rail, a large member of this group (13-16 inches long), but grayish in color and a common breeder and rarer winterer in salt-water marshes of Long Island; seen but rarely inland. They are noisy birds their calls being a grating and explosive series of *cac cac cac* notes plus a series of "grunts" and widely spaced *geck geck* calls. Like most of the rails, this is often called a Mud hen and has been shot in large numbers for sport and food. And let no one think they are easy to hit. If you will imagine the erratic swooping and fluttering of a scrap of brown paper being swept along in a high wind—that's the flight "pattern" of the rail.

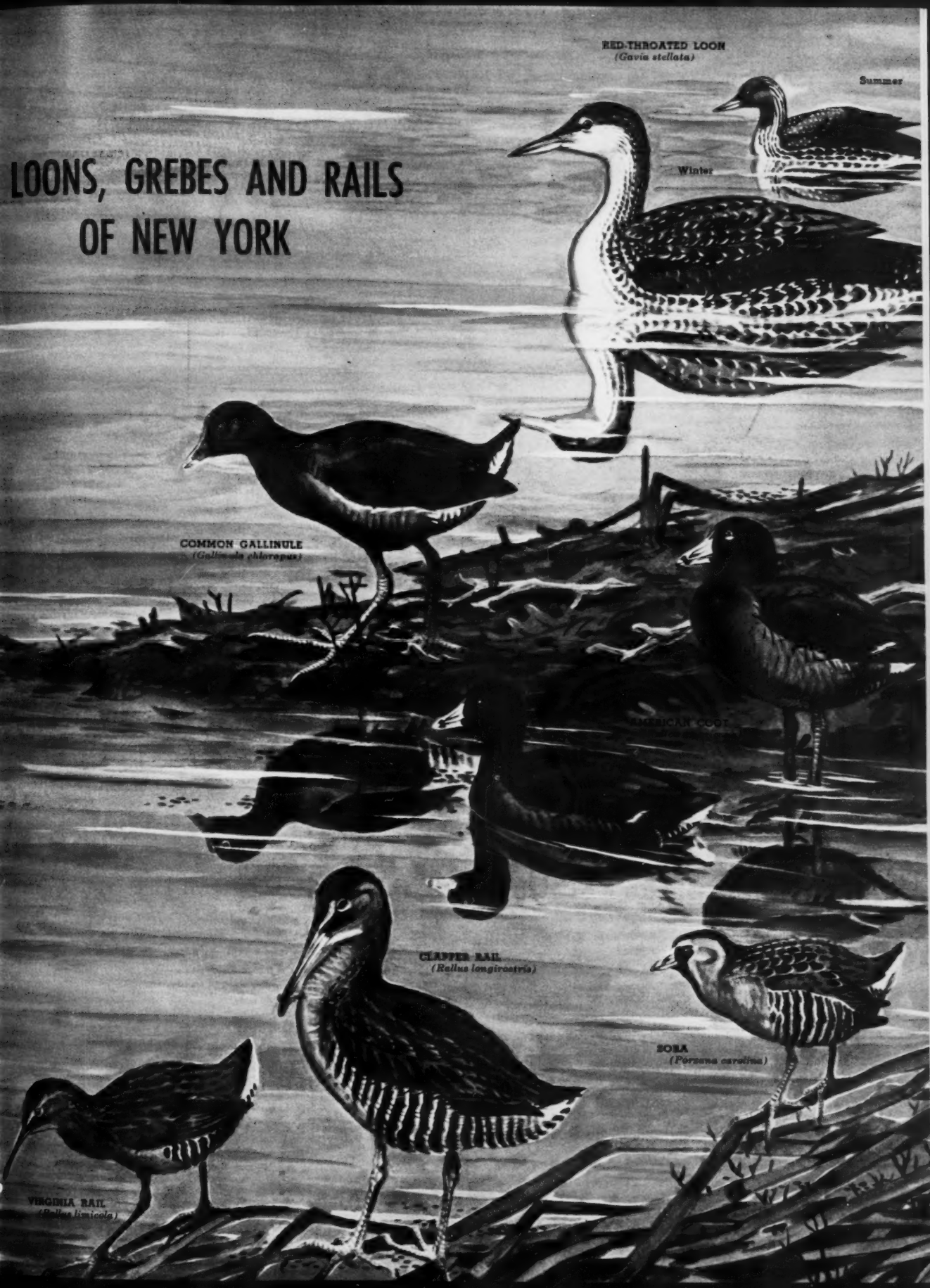
Virginia Rail (*Rallus limicola*). A fresh-water marsh bird, a fairly common breeder in New York except in the Adirondacks. It is a rare and irregular winterer. A much smaller bird than the King Rail (9-10½ inches long) generally darker colored with gray cheeks. Its calls are a gutteral repititious *cut cut cut, cutta-cutta-cutta* and it often makes sounds like the grunting of a hungry pig.

Sora (*Porzana carolina*). Often called the Carolina Rail this small species (8-10 inches long) has a shorter more conical bright yellow bill than the other rails described above. It breeds throughout the State and is a very rare winterer on Long Island. Its spring call is a rather sweet *er-eer*. It also makes a "whinnying" sound described by the famous naturalist Wm. Brewster thus: "It consists of a dozen or fifteen short whistles as sweet and clear in tone as a silver bell, the first eight or ten uttered very rapidly in an evenly descending scale, the remaining ones more deliberately and in uniform key. The whole series is often followed by a varying number of harsher, more drawling notes given at rather wide intervals." Considered the "best eating" of the rails.

The Yellow Rail (*Coturnicops*

(*Continued on page* 34)


COMMON LOON
(Gavia immer)
Winter
Summer
HORNED GREBE
(Podiceps auritus)
Summer
Winter
RED-NECKED GREBE
(Podiceps grisegena)
Winter
PIED-BILLED GREBE
(Podilymbus podiceps)


LOONS, GREBES AND RAILS
OF NEW YORK
RED-THROATED LOON
(Gavia stellata)
Summer
Winter
COMMON GALLINULE
(Gallinula chloropus)
AMERICAN COOT
CLAPPER RAIL
(Rallus longirostris)
SORA
(Porzana carolina)
VIRGINIA RAIL
(Rallus limicola)

50 Years of Beagling in New York

A Chronicle of the Empire—Oldest Beagle Club in the State

by William J. Glass

TWENTIETH CENTURY civilization, with all its frills and refinements, finds modern man not lacking in certain esthetic qualities peculiar to his early ancestors. The pursuit of wild game, the spirit of the chase and the full cry of the pack have transcended the vagaries of the ages to find their counterpart in the exhilarating sport of present day beagling.

The beagle hound is reputed to be one of the oldest of the canine breeds. But, unfortunately, recorded history is unable to provide us with the actual origin of the breed, although it is known there were hounds that hunted by scent in the days of the ancient Greeks and Romans. Other sources reveal the presence of hounds in England long before the Roman Conquest. Many contemporaries of King Arthur were houndsmen, among these, worthy of mention, was the Prince of Wales, Pwyll, whose superb breed of white hounds attracted much attention.

It is difficult to separate fact from legend concerning much of the information associated with the transformation, use and acceptance of the hound. However, by the time of Queen Elizabeth's reign, we find evidence of numerous hound packs hunted in Great Britain, by most of the country gentry. In that era, hounds were usually classified into two major groups. Large hounds, nimble and fleet afoot, were used exclusively for hunting deer and were called Buck

hounds, while the smaller, slower variety of hounds were hunted on hares and were called Beagles, an anglicized version of the French Begle. The word, Begle, is believed to have been derived from the old Norman word, Beigle, meaning small.

The British Isles have long played an important role in the history and development of the hound; but according to an authoritative source, the Spanish explorer, De Soto, is credited with the first hound importations to America. These Spanish hounds were burly brutes — vicious killers which would attack man or beast. For this reason they were used as dogs of war and to overtake runaway slaves from the Spaniards' colonial plantations.

In North America, colonization was accompanied by the introduction of many hounds of diverse strains. The early breeders had developed new hound types by introducing the "blood" of alien breeds, until the desired characteristics were attained. For example, there is strong evidence to support the contention that the fox terrier and the spaniel were used to improve the beagle breed — the former to diminish size and instill boldness; the latter to improve demeanor and working qualities in the field. Likewise, the fox hound is believed to have been evolved from a fusion of the early buck hounds and beagles. Later on, when speed became an asset, crosses of the bulldog and greyhound were employed to produce swiftness and stamina. However, in all instances, through selective breeding and relentless culling, the desired results were finally obtained. The resulting amalgamations were then bred in the pure state and have remained virtually so to the present time.

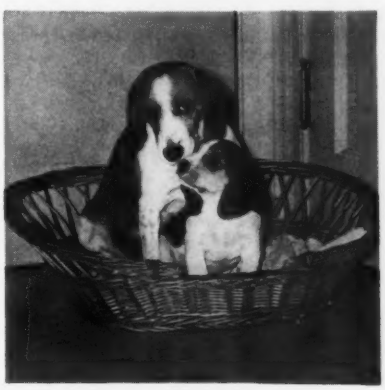
Back in merry old England, beagling declined somewhat in popularity and the passage of the Games Act had an adverse effect on the hunting of deer with hounds. Consequently, early in the Eighteenth Century, the fox was accepted as a suitable quarry of the chase, and riding to the hounds became popular with the younger set, who wished a more invigorating sport.

In this country, statesmen such as George Washington and Thomas Jefferson, were among the notable and ardent fox hunters of the day. Washington, particularly was an early and devoted patron of the hounds. On many an occasion he found solace and refuge from the affairs of State while listening to the pack and enjoying the panorama of the countryside. He also had a small reputation as a breeder of fine hounds. His kennel contained stock imported from famous English packs. Nonetheless, his most famous acquisitions were several French hounds received from General Lafayette in 1785. These were excellent specimens; sleek and muscular and pleasing to the eye. More important, they had been endowed with rich, resonant, melodious voices, described as like the tolling bells of some great cathedral city.

In the United States, prior to the 1870's, the beagle was virtually unknown, except for a smattering of types scattered throughout the Southern States. These hounds were more of the dachsunde type, mostly white or of a solid color and not handsome in appearance. To many historians, the turning point in the history of the American beagle is generally attributed to the English importations of General Richard Rowett of Carlinsville, Illinois, sometime during the mid-1860's. Rowett's acquisitions were vigorous hunters of excellent type, with straight legs and well defined muzzles. Unlike their American cousins, they bore the conventional tri-colored English markings of black, brown and white. The Rowett hounds and their descendants evidently did much to foster the popularity of the beagle in this country, for after 1870 the breed is mentioned frequently in the records of the early American bench shows.

By 1884, the beagle had risen from obscurity to prominence and it soon occupied an eminent position in the affairs of the kennel world. The conformity standards set forth by the kennel clubs enabled the sporting public to differentiate between a purebred beagle and a rabbit hound. Hitherto, any dog, regardless of size or breed, which could chase a rabbit was erroneously called a beagle.

In the spring of 1888 a group of dissatisfied beagle hound fanciers and breeders met in Boston, Massachusetts, resolving to do something for the welfare of the breed. Out of this meeting was born the National Beagle Club, the first of its kind. The objectives of this organization were twofold: To promote the interests of the beagle on the bench and in the field. Competitive field events (field trials) were unheard of and untried in hound circles, although field trials for setters and pointers had been in vogue for a number of years. After many months of careful preparations, the National Beagle Club inaugurated its bold, new program on Nov. 4, 1889, and held the first beagle field trial in this country at Hyannis, Massachusetts. Thus, organized beagling was launched in the United States.



Beagles in a basket

The success of the National's initial venture was reflected in the incorporation of the field trial as an annual event in the affairs of the club. During the immediate years that followed, the attention of the sporting dog world was focused on this daring innovation. Nevertheless, within a relatively short period of time, new beagle clubs, although few in number, were organized; each following the pattern of and the ideals proclaimed by the parent club, the National.

In some strange manner, more by accident than design, these clubs were strategically established throughout the country, thereby affording hunters and their ilk an opportunity to view the merits of this versatile breed. As a consequence, the beagle's fame grew and spread to many states, until the little hound was finally acclaimed as a superior rabbit dog.

In the fall of 1911, twenty-three years after the formation of the National Beagle Club, Dr. John R. MacElroy of Jonesville, N. Y., a beagle breeder of local repute, contacted several beagle owners in the eastern part of New York State for the purpose of forming a beagle club within the region. After many weeks of correspondence, Dr. MacElroy was successful in garnering the support of fifteen individuals, and on a cold December evening in 1911, twelve of the original fifteen beaglers held a meeting at Keeler's Hotel in Albany, and organized the first beagle club in New York — the tenth one to be established in the United States. At this first meeting a slate of officers was elected, with Dr. MacElroy heading the list as president; a constitution and by-laws was drafted; and, appropriately enough, the club was named the Empire.

The avowed purpose of all beagle clubs was to produce or breed better beagle hounds as a result of the rigid tests required at field trials. This responsibility was later shifted to the American Kennel Club, which has charge of the regulations relating to excellence in the perpetuation of purebred dogs.

Subsequently, the Empire held its first field trial, under the auspices of the

Empire members and their dogs at one of the early field trials

American Kennel Club, at Jonesville, on October 29, 1912. The field trial lasted four days and was attended by devotees of the sport from the New England area and Pennsylvania. On the fifth day, after the hounds had been run in braces on cottontail rabbits, the group retired to the vicinity of Corinth, N. Y. Here the beagles were combined as to sex and each class ran as a pack on snowshoe hares, to test the stamina and endurance of the hounds. A short time later, with the advent of new clubs holding field trials on varying hares exclusively, the Empire discontinued the pack running procedure.

At the first field trial, the hounds were sexed and ran in classes for those measuring 13 inches or under and those over 13 inches but not exceeding 15 inches. By means of a drawing, the contestants were braced (paired) and taken afield to compete against each other on cottontail rabbits. Two judges, well versed in hound work, were employed to follow each brace of hounds, noting the relative merits and demerits of the beagles, according to the established standards. Upon completion of this procedure — the running of the first series — the second series hounds were selected by the judges. This series was comprised of those beagles which had attained a predetermined score, in the first series the two highest scored hounds being selected as brace mates and so on. The winning hounds could be announced after the conclusion of the second series but occasionally subsequent series were required for this end.

A beagle hound was declared a field champion after winning three first places at licensed field trials. The second, third and fourth placed hounds received little more than honorable mention for their efforts. The fifth hound was designated as reserve and was entitled to advance one position in the event a higher placed hound was disqualified.

The method of holding present day field trials is virtually the same, except for minor alterations. To become a field champion today, a beagle must win three first places at licensed field trials and accrue 120 points. A licensed field trial is one at which championship points are awarded. The first place hound receives one point for each entry in the class, the second place hound one-half point and so on down the line.

During its long and colorful career, the Empire Beagle Club seems to have had a natural propensity for being an itinerant organization. The club never stayed in any one place long enough to develop and roots. For reasons not clear, the second annual field trial was held at Glen Lake, N. Y., from whence the club moved its location to Ballston Spa, N. Y. the following year. Salem, N. Y. was the site of the fourth annual field trials, and White Sulphur Springs on Saratoga Lake, N. Y. was selected the next year. The sojourn at White Sulphur Springs lasted until 1928 and was the longest of any in the history of the club.

From 1928 to 1935, headquarters were maintained at Acra, N. Y., in the Catskill mountains. However, by 1935 the internal affairs of the club had languished to such an extent that it was deemed advisable to find a new location for the welfare of the organization. Hence, Saratoga Lake, was selected as the new site of operations.

Prior to this time, because of the remoteness of the meager membership, many of whom resided in the neighboring states, only one meeting a year was held on the first evening of the annual field trial. The meeting was of a short duration and consisted of the election of officers and a discussion of any other topic pertinent to beagling.

The tide of events turned swiftly for the Empire during the Saratoga years. The club prospered and waxed well; an expanded sport sparked the imagination and interest of those inclined to beagling; and the membership roster was swelled with new recruits of a local origin. Consequently, arrangements were made to hold frequent meetings at Troy, N. Y., to transact the increased business of the club.

Another innovation was the $100 pack stake, a regular feature of the yearly licensed field trial. A $10 fee was the requirement for which an owner could enter his best prospect in the event, with hopes of winning some of the prize money. In this stake the hounds were combined regardless of sex or size and run as a pack on cottontails until three winners were selected. The prize money was then divided $50, $30, $20.

During this same period of time, the annual field trial had been lengthened to six days, and included special classes for derbies (young hounds which had been whelped in the preceding year) and a class for hounds two years of age. Bench shows were also incorporated as a regular part of the meet in the late '30's. A special judge was hired for this event and the cream of the show circuit trekked to Saratoga Lake each year to vie for honors.

With the advent of World War II, the activities of the Empire Beagle Club were somewhat limited, but in the meantime, the sport of beagling had outgrown its primitive purpose and was recognized as one of the fastest growing modes of outdoor recreation. This fact was borne out by the enactment of legislation in 1945 allowing the establishment of Special Dog Training Areas in New York State, for the perennial training of hounds, and other sporting breeds, and the holding of field trials at any time of the year. But fate intervened again in 1947 and it became necessary for the Empire to abandon Saratoga and seek new quarters. This time, ironically enough, it was forced to leave because of a scarcity of rabbits in the area.

Many of the older members lamented the passing of the Saratoga years. Indeed, they had good cause to do so. Beaglers are a gregarious lot and many pleasant memories, traditions and associations had been formed there, enough to endure a lifetime. However, in some imperceptible manner this was only a prelude to the expanding years ahead.

Once more the members sallied forth and with good fortune suitable land was leased at Feura Bush, N.Y., within hailing distance of the State Capitol. Conditions and affairs were altered considerably at this site. The members assembled regularly on the premises each month to conduct the intricate business of beagling; an influx of new members filled the ranks to capacity, and for the first time

the club was financially healthy. The annual field trial was reduced to four days, to accommodate the ever increasing number of entries; in general, all was well.

Nevertheless, the Empire's old nemesis soon appeared on the horizon and circumstances beyond the control of the club caused it to look elsewhere. Those were alarming days — days of a crisis —whither would the Empire go now?

Once again, the Empire set out to purchase a new tract of land. This was accomplished in 1952 when 154 acres of prime rabbit habitat was secured in the Township of Schodack, Rensselear County. The area was later increased to 254 acres. Thus, after forty years of wandering, Empire, the vagabond — the intinerant — had found a haven of its own. Once again the old kennels, showing their years of service, were dismantled piece by piece, transported across the Hudson River to Schodack and erected for what was hoped the last time. Feverish work was begun immediately to construct a clubhouse and the grounds were groomed in accordance with wildlife habitat management practices. Over the years many tasks have been done to conclude the operation.

After fifty years of existence, the Empire has seen the beagle hound rise to the pinnacle of achievement. From 1937 to 1953 the beagle breed held the number two spot in popularity; and for six years thereafter it was acclaimed as the leader of the canine world, according to the American Kennel Club tabulations. Today there are more than 600 beagle clubs in the United States and Canada, attesting to the popularity of the sport of beagling itself. New York State ranks third among the states having the most beagle clubs operating within their borders, preceded only by Ohio and Pennsylvania.

Time has also wrought many changes among the membership. New faces appear constantly. But after half a century two of the original 15 members, Herman Gietz and Willet Randall, are with us yet. Gietz resides at Castleton, N. Y. and has been an active member these many years. He is currently serving as club treasurer. Randall, at his ancestral home in North Creek, N. Y., has not been active in the club for some time.

While it is true that the formal aspects of beagling have done much to improve and promulgate the beagle breed, nevertheless the sport has attracted many because it has much to offer in the way of gratifying remuneration. Few other forms of outdoor recreation bring one so intimately into constant contact with nature; to the sounds, the sights, and the smells of the good earth. These are as rare wine

Rats—

Among the Earliest Immigrants to America

by A. T. Shorey

AMONG all the rodents, perhaps the most intriguing is the common rat. Found wherever humans congregate, they are met up with in most unusual places. While not domestic animals, they seem to be domesticated wherever pollution control and garbage disposal is neglected and that is most everywhere.

Like most of us, the first rats came in as immigrants in old-time sailing ships, especially in those ships engaged in the China trade. Sailors were a superstitous lot and a ship without rats was considered a hoodoo ship and unsafe. Rats desert a leaky ship.

A great-grandfather of the writer made a trip to China long, long ago, with a cargo of pine knots and ginseng roots which he bartered for a cargo of tea for Liverpool along with some free riding Chinese rats. He discharged the tea at a big profit and loaded up with tools, crockery, etc. along with a few English Clydeside rats and set sail for his home port, Bath, Maine on the Kennebec, where he retired having made his "pile" on a three-year voyage around the world.

The stowaway rats deserted the ship —about the year 1802—the first rats in Maine? In the course of time, Chinese rats, Clydeside rats, Mexican rats, Cuban rats, etc., etc. produced in that old shipping city a breed of rat second to none on the Atlantic Coast. Waking up at night in any old Bath mansion was an experience. Rats were rampant between the floors. The racket was terrific. Talk about ghosts! Making a trip to the "Chic Sale" in the back yard after dark was an adventure. So the rats came to America?

In the year 1910, subway builders putting a tube beneath Nassau Street in Manhattan ran into an abandoned sewer tunnel under the edge of the Pulitzer Building and broke through into the subbasement. This old tunnel seemed to be headquarters for all the rats in the Hudson Valley. King of the tunnel was a vile old tom cat, evidently nature's way of keeping the rat population within some sort of bounds.

Some years later, we took a trip up Cold River in the Adirondacks and discovered Noah John Rondeau. Noah John was a smooth shaven youth in those days. The world and the Conservation Department had not yet discovered him. As the hermit of the Cold River Country. He was guide then, a good one, for a group of Philadelphia medicos shying away from telephones. Rondeau's cabin near the Big Dam had been the blacksmith shop when the area was being lumbered. We slept in the cabin and rats were running over us all night. Noah did not seem to mind them. He had the strange notion they kept the porkies away. These Cold River rats had a lot in common with the Kennebec rats I had known as a boy.

Some years later, we were up Hunter Pass way before the Elk Lake-Mt. Dix trail was opened. Hunter's old lumber camp up the East Inlet was just beginning to fall in. The place was swarming with rats—big ones—that came in via the Keene Valley trail. This set us to wondering where these rats all came from.

A few years later, looking through one of Verplanck Colvin's survey note books, we got what seemed to be a solution for the Adirondack rat mystery. Colvin got the information from an old timer in Keene to the effect that back in 1812 a General Giero was on his way north with a big convoy of supplies, beef on the hoof, etc. for the army on the St. Lawrence. He camped in Keene for two nights to give the livestock a chance to relax. Sad to relate there were rats in the fodder and they escaped. Up to that time rats had never been heard of in the Adirondacks.

Anyway, these emigree rats, no doubt from the Kennebec via Vermont and Whitehall (and some Adirondackers vow the Vermonters ferried them across Lake Champlain), escaped in Keene Valley and started a new breed of animal which thrived to such an extent that at least once a year one of them is seen and the report comes in to "Bill" Petty, Chief Forester for the region, that a new breed of wolf has been discovered.

"Of course," remarked an old timer up in Keene, "it's a descendant of one of Giero's rats. There are still a few of them around. I call 'em 'Rag-a-bee-bobs.'"

Small Game Harvest, 1960-61

by H. F. Maguire

THIS past season, 1960-61, our annual poll of small game licensees was expanded from 7,400 to 24,000 to enable us to furnish reliable estimates of hunting success and hunters' activities on a regional basis instead of statewide as used in previous years. However, because of space limitations, only statewide summaries of the tabulated game statistics will be used here.

We mailed 23,965 questionnaires to licensees selected at random from the 504,917 individuals who had bought small game licenses during the seasons on protected game; that is, from October 1, 1960 through March 31, 1961, when the varying hare season closed. Eight hundred twelve, or 3.4 per cent, of the licensees, could not be reached despite the assiduous efforts of dedicated Post Office employees.

Of those who were reached, 18,949, or 82 per cent, returned questionnaires; a very satisfactory response for this type of survey. Our thanks are extended to all co-operating licensees.

The percentage of hunters stating that they did not hunt small game increased from last season's 20.8 to 24.8 this season. From previous year's data we know that a close, positive correlation exists between license sales and numbers of hunters not using their licenses—the increase in numbers of non-users, therefore, was not surprising. The 75.8 per cent who went afield sometime during the protected-game seasons numbered 379,700 hunters (*see Table 1*).

This past season information was collected on eight small game species—*see table 2*. Questionnaire returns for six of these eight species had been analyzed the previous season, but not the woodcock and raccoons. This is our first effort to collect data on woodcock. Information on raccoons was last collected in 1957-58 when 245,240 were bagged during the season. Our inquiry this year was de-

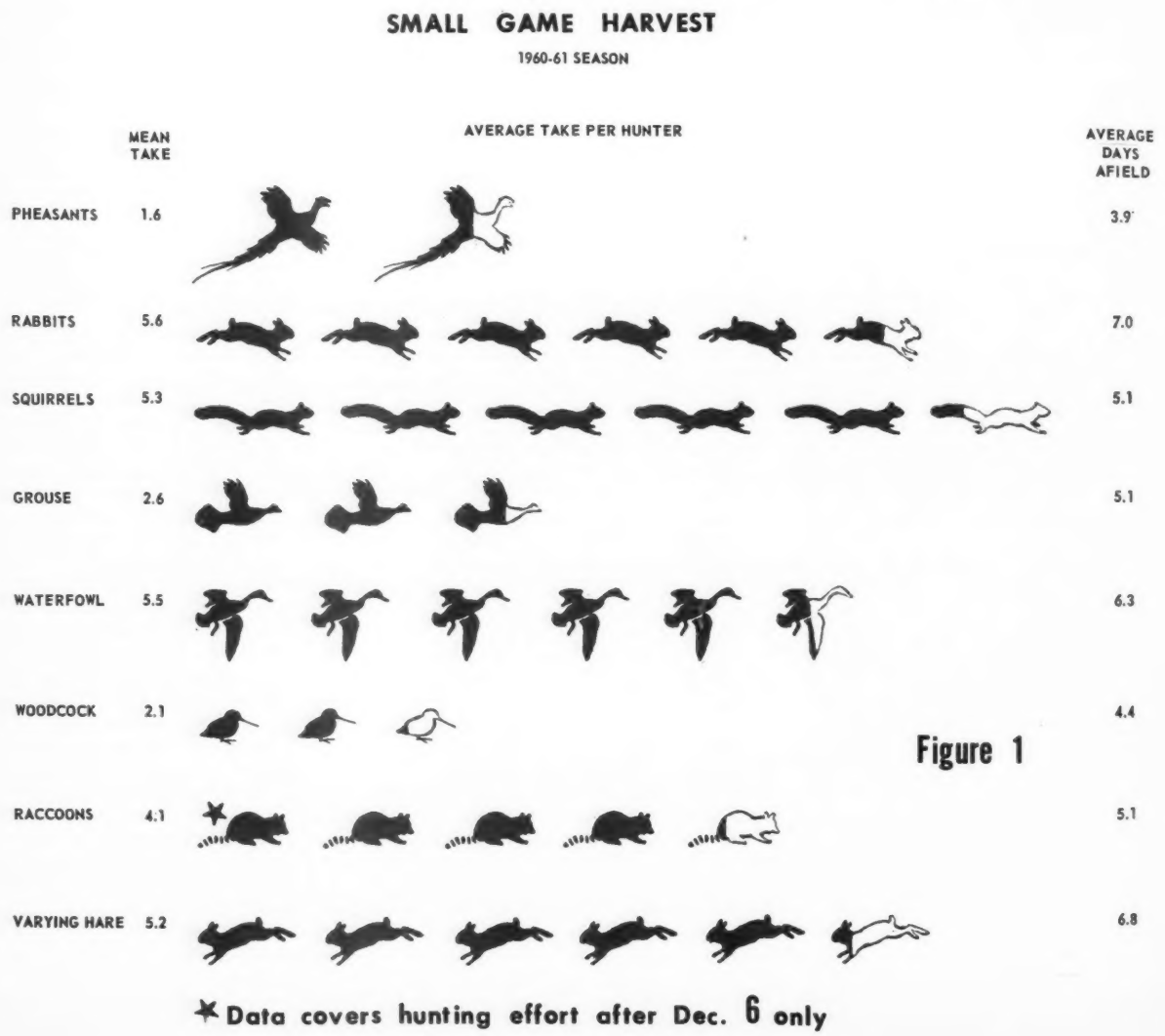
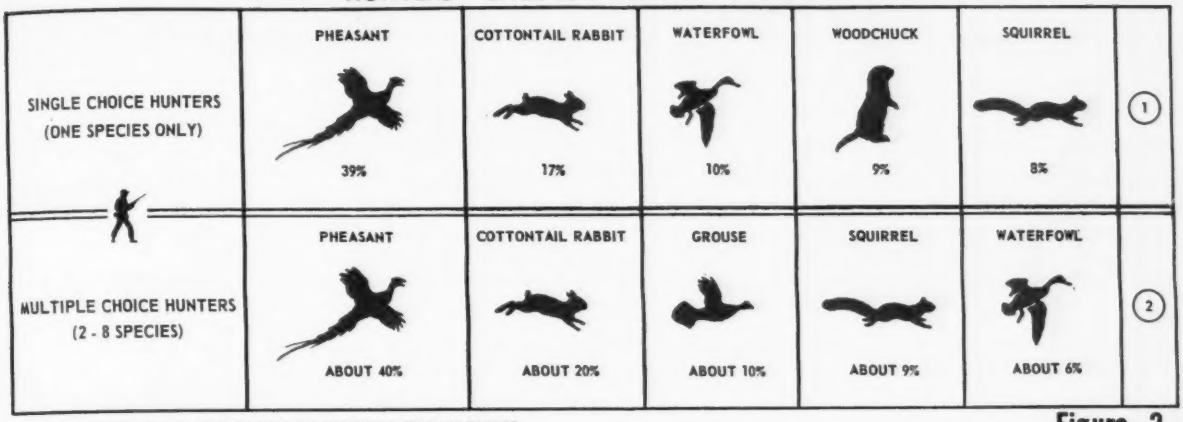


Figure 1

HUNTERS' CHOICE - SMALL GAME



1. BALANCE (17%) HUNT 11 OTHER SPECIES AS FIRST AND ONLY CHOICE.

2. BALANCE (15%) HUNT 18 OTHER SPECIES IN THEIR SMALL GAME BAG.

Figure 2

Table 1.

Small Game License Sales and Hunting Activity

*License Period**	*License Sales*	*Licensees Afield Hunting*	*Per Cent Not Using License*
1960-61	504,917	379,799	24.8
1959-60	459,712	364,092	20.8
Change from 1959-60	+45,205	+15,707	—
Per cent change from 1959-60	+9.8	+4.3	—

*First half of license year. Approximately 96 per cent of all small game license sales are made during this period.

Table 2.

Small Game Statistics

1960-61 vs. 1959-60

	Number Taken		*No. of Hunters*		*Take per Day*	
Species	*1960-61 Season*	*1959-60 Season*	*1960-61 Season*	*1959-60 Season*	*1960-61 Season*	*1959-60 Season*
Pheasants	398,593	336,811	255,980	235,554	0.402	0.380
Per cent Change	up 18.3		up 8.7		up 5.8	
Cottontail rabbits	1,331,102	1,487,526	237,671	228,585	0.805	0.765
Per cent Change	down 10.5		up 4.0		up 5.2	
Squirrels	982,879	822,678	184,137	155,123	1.052	0.930
Per cent Change	up 19.5		up 18.7		up 13.1	
Ruffed grouse	441,404	317,707	172,986	140,447	0.497	0.431
Per cent Change	up 38.9		up 23.2		up 15.3	
Waterfowl	304,072	260,397	55,437	53,949	0.876	0.754
Per cent Change	up 16.8		up 2.8		up 16.2	
Woodcock	92,189	*	43,266	*	0.487	*
Per cent Change						
Raccoons**	106,343	*	26,056	*	0.794	*
Per cent Change						
Varying hare	311,176	246,951	59,887	46,734	0.763	0.783
Per cent Change	up 26.0		up 28.1		down 2.6	

*Data not collected in 1959-60 season.
**Data covers hunting effort after Dec. 6, 1960 only.

signed to get data on raccoon hunter activities only after December 6, 1960 to determine hunting effort on this species after the close of the deer season. Therefor, the take of 106,343 last season should not be compared with the 1957-58 season's take.

You'll note that the number of hunters increased for all six of the eight species where annual comparisons can be made. Numbers taken increased in five of the six species—only rabbits showed a decrease. Since the continued decline in rabbit take (this is the fourth season) may lead to misinterpretations, it may be well to offer an explanation (perhaps conjecture is a better word) as this point. Many hunters are of the opinion that yearly changes in the reported take reflect corresponding changes in the game populations. This conclusion would be justified if other factors (weather conditions, number of hunters afield and average hours afield) were equal. However, this past season a 4 per cent increase in the number of rabbit hunters was accompanied by a 15 per cent drop in the number of days afield. This was reflected in an 11 per cent decline in the number of rabbits taken. Many hunters and Department field personnel reported that a higher than normal number of days, especially weekends, were unfavorable for rabbit hunting because of deep, light snow conditions. Since the take per day afield during 1960-61 season was 0.805 compared to 0.765 the previous season, one may reasonably infer that the rabbit population had not declined; rather, the take per day suggests a slight increase in the population—even though the take held at a little less than one rabbit per man-day afield.

Extended seasons, numbers of hunters, hunters' days afield (hunting pressure), and take showed sizeable increases over

(*Continued on page* 34)

the back of the book

Fall campsites

Fourteen public campsites in the Adirondacks and four in the Catskills will remain open throughout the autumn and until the close of the deer season December 5.

Where a caretaker is on duty, a camping permit must be obtained and the usual camping and day-use service charges paid. There will be no fees at campsites where caretakers are not on duty, although hunters are advised to notify the local Forest Ranger before camping.

Hunters using the campsites may possess firearms on these areas during the hunting season, but Department regulations prohibit the discharge of firearms on campsite grounds at any time.

Campsites remaining open in the Adirondacks are:

Essex County — Sharp Bridge, Wilmington Notch. *Franklin* — Fish Creek Ponds, Rollins Pond, Meacham Lake. *Hamilton* — Eighth Lake, Forked Lake,* Lake Durant, Lewey Lake*, Little Sand Point, Moffit Beach*, Sacandaga. *St. Lawrence* — Cranberry Lake. *Warren* — Eagle Point.

In the Catskills: *Greene County*—Devil's Tombstone, North Lake. *Sullivan*—Beaverkill. *Ulster*—Woodland Valley, will remain open.

(**Caretaker on duty*).

Autumn fruits and nuts

Autumn, in many respects, is the finest time of the year for strolls and "cook outs" in your favorite outdoor haunts. For added enjoyment, there is the fun of finding many wild fruits and nuts. Some you will relish as you pick them; others may be taken home for use in various ways.

Elderberries, filled with crimson juice, are borne on large shrubs, common in woods and along roadsides, ditches and watercourses. The deep purple berries are sweet but rather flat-tasting. If lemon rind, or, preferably, wild grapes are included, they can be used like blueberries in pies, muffins and pancakes. For jam and jelly add vinegar, or pectin, and sugar.

Wild grape vines, climbing over shrubs and small trees, are abundant along the trails and woodland borders. They bear bunches of small grapes that, when ripe, vary in color from light blue to nearly black. The purple juice has a tart tangy flavor. Wild grapes are fine for wine and jelly. Alone or mixed with other fruit, they make delicious preserves and pies. Most kinds become sweeter after a heavy frost.

Black cherry trees are common and are often loaded with drooping clusters of shiny black berries that have a slightly bitter but pleasant winey flavor. They are easily picked from the smaller trees and used to make jelly, jam, preserves and wine, or to flavor ice cream and beverages such as "cherry bounce."

The choke cherry is a shrub or small tree that grows like a weed along fencerows, woodland borders, in old fields, and as an understory in the forests. On many of them the branches are drooping with clusters of dark red berries. They have very bitter and "puckery" juice but Indians used them, and it is said that they lose that astringent quality when cooked to make jelly. Birds love them.

The wild plum, a small thorny tree, has round pulpy plums — red or sometimes yellow — have a tough skin but are good to eat or use for jelly, jam, preserves and pies.

Hawthorns, millions of them, also grow like weeds. Their fruits or "haws," resembling tiny apples, vary in size and in color from scarlet to dull red or yellow. The hard seeds are surrounded by pulpy flesh that is dry and tasteless in most species. The variety with large scarlet mealy fruit is the "red haw" commonly eaten, and makes good jelly if you can find enough that aren't wormy.

Wild crabapples, too, are loaded with small green apples. These are too sour to eat raw but taste better after being frozen, and few wild fruits make finer jelly. When combined with wild grapes they make excellent jam, preserves and pickles. If buried until spring, they make good cider.

In the wooded uplands there are innumerable shagbark hickories. On the ground, beneath some, you may find the nuts enclosed in thick green husks. Inside the hard white shell is a sweet kernel unsurpassed for cakes, candies and fireside eating. In some valleys and moist woodlands there are black walnuts. The nut, inside a round green husk that becomes black as it decays, has an oily kernel with a strong but pleasant taste. They are mighty fine in candy, cakes and ice cream. In a few locations there are thickets of hazelnut bushes. The hazelnut, small and much like the European filbert, has a sweet flavor all its own.

But before you pick get permission.

All of these fruits and nuts are important foods, too, for wildlife such as birds and squirrels. Don't injure the trees, shrubs and vines. — NATURE BULLETIN, *Forest Preserve District, Cook County, Ill.*

Ear-tagged bears

One hundred seventy-nine of a total of 268 black bears ear-tagged in New York have been recovered. Six were taken in 1956, 48 in 1957, 81 in 1958, 34 in 1959 and 10 in 1960. The sources of these tagged bears included 72 taken by hunters, eight shot out of season, 91 retrapped, one killed by a train. In addition, there were seven sight records.

Hunters furnished information on movements by reporting four tagged bears taken in 1956, 11 in 1957, 25 in 1958, 24 in 1959 and 8 in 1960. A $25 reward was paid to all hunters returning the skulls and ear tags, reporting kill locations and dates of kill.

A $25 reward payment will be made to any hunter taking a tagged bear during the big game season as long as any tagged bears remain in the woods. Report to the Big Game Project, N.Y.S. Conservation Department, Wildlife Research Laboratory, Delmar, N.Y., giving the above noted information.

For sure!

A quarter-century afield has made me discard most of the things I've read and heard about hunting, and today I'm almost back where I started from. But if I still don't know much about hunting; what I do know is for sure.

This store of outdoor wisdom gathered over 25 years of boondocking and chore-dodging, falls into four broad categories:

People

(1) A hunting partner usually oversleeps. (2) A wife sleeps deepest when her duck-hunter husband wants his breakfast. (3) The guys in the next blind are game hogs. (4) If you wonder where to hunt ask a barber. (5) Beware of the quick shooter, for thou shalt inherit his quickly shot birds. (6) Blessed be the camp cook, the wife who cleans game and the partner with two candy bars.

Equipment

(1) A knife can't be too sharp. (2) Hip boots leak only in cold water. (3) When matches are fewest, firewood is wettest. (4) For a drippy nose, a wool glove beats any bandanna. (5) Never be the only man in the party with a game pocket in his coat.

Critters

(1) Foxes are not fit to eat. (2) While a duck is still coming at you, shut up. (3) Squirrels can't lie still for over 20 minutes. (4) I can't sit still for over 19. (5) Geese aren't smart; they're just smarter than most hunters.

Other things

(1) Fences are always two inches higher than my legs. (2) Your shot was lucky; mine was skillful. (3) Only the men who build farm gates can understand them. (4) Bird dogs are optimists; pheasants are pessimists. (5) There is no greater faith than a small boy's defense of his birdless dad. (6) The last hills are the highest.—PRIMGHAR BELL, *Iowa Conservationist*

Autumn olive

Autumn olive is a wide spreading shrub, growing as high as 15 feet. A native of the Orient, it was introduced into this country about 1830. It furnishes food and cover for wildlife, has a pleasant, sweet smelling flower and a bright berry-like fruit. Its uses include planting for screens and barriers, erosion control, windbreaks, soil stabilization and as ornamentals.

The U.S. Department of Agriculture, Washington, D.C., publishes a Leaflet (No. 458), entitled "Autumn Olive for Wildlife and Other Conservation Uses," which outlines a variety of uses for this versatile shrub.

In Maryland

On May 1 and 2 of this year, more than 100 science teachers were absent from their classrooms in Montgomery County—Maryland, that is. They left them voluntarily to go to another school new to them—an outdoor school—to further their understanding of the conservation of Maryland's natural resources.

Formally known as an In-Service Institute for Outdoor Science Education, this was Montgomery County's first step to promote the teaching of conservation in its county school system as a regular part of the curriculum. This is something we would to a far greater degree like to see happen right here in New York State.

Top resource people from local, state and federal conservation agencies turned teachers for the two days and conducted outdoor classes in soil, water, wildlife and forest conservation for the science teachers. A good indication of the success of this approach is that already a second institute has been requested by these teachers for this fall.

To help round out the program, a representative from New York's Division of Conservation Education was invited to attend and to describe the Boys' Conservation Education Camp Program in New York. Interest in this program was so great that several inquiries were made as to how Maryland youths could arrange to attend the New York camps.

It might be of interest to our organized sportsmen to know that, although this training program was sponsored and conducted by the Montgomery County Public Schools and the Montgomery County Conservation Education Committee of Maryland, the local Izaak Walton League co-operated by providing its clubhouse, grounds and facilities for the occasion.

As New York's fortunate representative to this Maryland venture, I can vouch not only for the hospitality, courtesy and friendliness of all those I was privileged to meet, but for their dedicated and sincere efforts to bring a better understanding of conservation to the youth of Maryland.—ROY IRVING

Conservation mural

Those who enter the lobby of the Conservation Department's office building on the State Campus at Albany will first be attracted to the large mural depicting our great natural resources and their impact on everything we do in this modern age.

Recognizing in artistic theme the basic natural resource areas of forests, soils, fish and game, outdoor recreation and water resources, the mural relates and dramatizes their inter-dependence through a stream rising in forested highlands, then sweeping as a river finally to the sea.

Here, Lee Trimm, brother of H. Wayne Trimm, staff artist for Conservation Education and this magazine, is shown with his wife putting the finishing touches on the mural.

Streptothricosis

(Continued from page 15)

scarified skin (*Figures 2, 3*). Multiple small boils 2 to 3 mm. in diameter, associated with the hair roots and containing pus, developed in all animals as early as two days after inoculation. As in man, a reddish crater was observed wherever exudate was expressed from a pustule. Boils rarely exceeded 5 mm. in diameter; healing was usually accompanied by the formation of a brownish scab which remained firmly attached or became elevated as the hair grew longer. Frequently scabs were so numerous as to form a crust covering a substantial area.

Inflammation and swelling of the inoculated foot occurred in all animals but was most noticeable in those with white or light skins. In some animals, particularly sheep, the inflammation was sufficiently severe to cause lameness of two or three days duration. Despite the fact that the animals were maintained in a warm, nonhumid environment, infection persisted for from seventeen to twenty-five days.

Animals injected into the skin developed a single small lump varying from 3 to 15 mm. in diameter at the site of inoculation. The causative organism, Dermatophilus sp., was recovered from each of the species inoculated. All animals recovered without treatment.

Based on present knowledge, Streptothricosis does not appear to be of major concern in either man or animals. It is probable, however, that the disease is more widespread than recognized, particularly in animals. Dr. Bentinck-Smith has recently reported Streptothricosis in horses from New York and Vermont. Both the Health Department and the Conservation Department would like to learn more about the prevalence of this disease. If you have or observe a deer or other animal which has infection similar to those described above, call or notify the State of New York Conservation Department. Similarly, if you or members of your party or family develop skin lesions after handling deer or other animals, contact your physician or local health officer or call the State of New York Health Department.

The Farmer's Museum At Cooperstown

(Continued from page 19)

dents long since grown and passed away, where readin', writin' and 'rithmetic were taught to the tune of a hickory stick, and where a dunce stool stands in the corner. And finally, to the village tavern where the men folk gathered of an evening to drink nut-brown ale from pewter mugs.

Now, before you leave, walk out on the village green and close your eyes. You'll see the trapper emerging from the wilderness, a bundle of furs slung over his shoulder; you'll hear the creak of wagon wheels—a farmer bringing produce into town; you'll hear the clear, echoing clang of the smithy's hammer, and the laughter of children around the little school. You'll smell the resinous pungency of scorched wood as the cooper fits hoops to a barrel, and perhaps the faint aroma of fresh, hot bread from the housewives' brick ovens. And you'll know, as you climb into your time capsule to be thrust forward again into the Mid-Twentieth Century, that here in the land and times our ancestors were brave, strong and happy people who had learned to live simply and well—close to the forests, the soil and water; all the natural resources which sustained them then, and upon which, no matter how complex our lives have become, we still are dependent.

Some Water Birds Of New York

(Continued from page 23)

noveboracensis), the **Black Rail** (*Laterallus jamaicensis*) and the **Corn Crake** (*Crex crex*) are three small rails, very rare in the State and not shown or discussed here for that reason.

Common Gallinule (*Gallinula chloropus*). Breeds commonly in central New York, less commonly in the rest of the State. A colorful bird of our marshlands, but often unnoticed; possibly because so few people take the trouble to look for beauty in a marsh. It is a medium sized bird (12-14 inches long) that makes enough noise when about, in a series of *kree-arrrs* or *kruck krucks*. By some, highly thought of as a game bird.

The other gallinule recorded in New York is the much rarer **Purple Gallinule** (*Porphyrula martinica*) whose plumage is much brighter purple color than that of the Common Gallinule.

American Coot (*Fulica americana*). This bird is a medium sized (13-16 inches long) member of the rail family which is "crazy as a coot," possibly because it acts more like a duck, and has feet like a grebe. It breeds locally in central New York, but is a common transient everywhere in the State. Its flesh is generally considered inferior to most of our ducks and to that of the Sora. It was formerly shot in large numbers. It is the quietest of the rail family in these parts — generally limiting its calls to a few clucks.

Small Game Harvest—— 1960-61

(Continued from page 31)

the preceding year for ruffed grouse and varying hare. One or more of the first three factors could explain the increased take. But the game populations also have something to do with the figures. Varying hare numbers have been high now for three years and ruffed grouse showed a marked increase in 1960, according to our biologists.

On the whole, the last season was much more satisfactory than the previous season from the hunters' view point. The take per hunter day afield was up for all species except varying hare and for hare the decline was only 2.6 per cent.

Three years ago (1957-58 season) we asked hunters to indicate their game preference. The relatively small sample used at that time prevented us from breaking down the responses into sufficiently large groupings by the number of species preferred. We suspected that the order of preference might vary among groups who selected different numbers of preferred species. As happens so often when facts, as represented by our tabulation of responses to this question, collide with assumption, the assumption suffers. Our conjecture was sound only for hunters who selected one species—their order of preference being pheasants, rabbits, waterfowl, woodchucks, and squirrels. Hunters who selected from two to eight species maintained the unvarying order of pheasants, rabbits, ruffed grouse, squirrels and waterfowl. Hunters who selected nine or more species were too few in number for valid comparisons. We had several hunters select 24 species! We'd be willing to venture a shilling or two that none of them could recall the exact order of his selections.

New youth camp

Governor Rockefeller strikes a blow for youth and conservation

The State Division for Youth has established its first rehabilitation camp at Rensselaerville in Albany County. It is a work and training center for 60 boys, 15 to 17 years of age, who have been referred to it by the courts. This camp is the third youth center to be opened by the new Youth Division, with nine more centers planned for opening during the 1961-62 fiscal year.

A camp, like the one at Rensselaerville, will be started at Salamanca in Cattaraugus County early in the fall. The Salamanca camp will be a Youth Opportunity Center to which authorized agencies, with family consent, can refer boys, in danger of becoming delinquents, before they get in trouble with the courts. In both camps, the boys will work — and work hard.

At Rensselaerville, they will work on fish, game and forestry projects, and build access roads in the forest plantations of the Conservation Department. This work will be done under strict supervision and will be of considerable benefit to the immediate area. Also it will improve recreational facilities for general public use and provide increased protection against forest fires. In the event of natural disasters such as hurricanes, forest fires and very heavy snowfall, the organized crews of this camp should prove to be of considerable value.

In addition to work, accelerated instruction will be provided those youths whose ability and interests justify it to enable them to re-enter school upon return to their homes. Special vocational instruction will be provided in such areas as industrial woodworking, painting and maintenance. Remedial instruction for youths retarded in reading and arithmetic will also be offered, along with recreation and cultural and religious programs.

The objective of the camps will be to return these young men to society with useful work skills, good work habits and a better outlook on what they are to make of themselves in their lifetime and their responsibility to society in general.

Mistaken identity

A novice in Maine reported that he had shot a mule, mistaking it for a deer but further investigation revealed that it wasn't a mule after all, it was a moose!

The bobcat

An excellent hunter, the bobcat will patiently stalk his quarry until he finds an ideal location to attack. His appetite is satisfied mostly with rabbits, squirrels and mice.

Super trees

Better than ever trees, taller, bigger, faster growing and of higher quality, are springing up all over the country. The development of super trees has involved the efforts of many forest researchers and geneticists in recent years.

The application of multiple use principles and of getting the most rapid turnover of renewable forest resources from an ever shrinking commercial forest acreage is a continuing challenge.

The search for superior trees has led to some interesting discoveries and new theories regarding improvement of the tree breed. Investigative efforts by forest industries, federal and state agencies and forestry schools in the field of genetics are focusing on development of seed orchards as special super-seed producing areas from trees having especially desirable characteristics.

Some characteristics of trees are passed on from parent to offspring, while others may be controlled by the environment in which the seed germinates and grows. When this inheritance pattern can be determined, forest genetics will move ahead even faster. A forest geneticist may now cite a few examples of how inheritance works on trees. A corn geneticist can cite hundreds. It is predicted that some day foresters will grow tree crops with the same assurance of their quality control as a progressive farmer now has.

Historical diary

Publication of an historical diary of a hunting and fishing trip of more than one hundred years ago has been announced by the Adirondack Museum at Blue Mountain Lake. Scene of the story is Lewey Lake, between Speculator and Indian Lake, where the Department has a public campsite.

The book is a facsimile reproduction of the manuscript exactly as it was written. There are forty-one pen and ink drawings of the adventures and mishaps of two gentlemen from New York who came to get their deer and trout, interrupted by a bear chase. A transcript of the text and typescript is included.

Introduction is by Warder H. Cadbury of Back Log Camp at Sabael and tells of other early visitors to the region, the origin of the names of Speculator and Lake Pleasant, of early hotels and of the famous Sturges family.

The diary is attractively bound in hard covers and is entitled "Journal of a Hunting Excursion to Louis Lake in 1851." It can be ordered from the Museum for $6.75 postpaid. —ROLAND B. MILLER

Smokey's story

Rep. Harold C. Ostertag and poster

The Smokey Bear story has been heart-warming and rewarding and may now be moving toward still another significant milestone.

A drawing of Smokey Bear attired in dungarees and an old-styled ranger's hat became the symbol in 1945 of the Cooperative Forest Fire Prevention Campaign conducted by the U.S. Forest Service and state foresters. The drawing carried the caption: "Smokey Says—Care Will Prevent 9 out of 10 Forest Fires," and copies were displayed throughout the country. In 1950, Smokey became a living symbol and the entire fire prevention program in the country received an amazing boost.

In the wake of a severe forest fire in the West that year, a Forest Ranger rescued a small black cub and nursed him back to health. The cub was soon named Little Smokey and was sent to Washington's National Zoological Park to become the living symbol of forest fire prevention. There he has entertained millions of children and adult visitors in the past decade.

Smokey quickly captured the imagination of the country, and private business groups began to use his likeness. To assure that Smokey would continue to be used in a suitable manner, legislation establishing necessary safeguards and providing for an orderly commercial education support program was enacted. The Act provided that a special committee pass on all requests for using the Smokey Bear symbol, with royalties to be paid for any commercial use of the symbol. Over the past eight years, the Smokey Bear program has brought in more than $200,000 in royalties. These funds are used to support the nationwide forest fire prevention program. Royalties have come from the production of stuffed toy animals, books, T-shirts, games, records, cookies, sports equipment, etc.

Under the fire prevention education program, 20 million pieces of informational materials were distributed last year, including posters, pamphlets, calendars, decals, books and Smokey Bear Junior Forest Ranger handbooks. Public service announcements valued at $14 million were contributed free of charge by newspapers, radio and television. A Junior Forest Ranger Program enables the Forest Service to provide an official kit of fire prevention materials to each boy and girl who writes to Smokey Bear Headquarters. More than 3½ million young Americans have enlisted in the cause of forest fire prevention and Smokey still receives 1,000 letters daily.

This unusual effort has brought a gratifying reduction in the destruction of one of our most important national resources —our forest lands. In 1957, for example, the number of man-caused forest fires in the country fell below 100,000 for the first time in history and the acreage burned was below four million. This record has continued each year since then.

Compare those totals with the destruction from forest fires just 15 years earlier —205,000 fires that burned 31 million acres. Foresters estimate that the Smokey Bear program has saved forest resources valued at $10 billion.

One aspect of the Smokey saga that has not progressed as successfully, however, is the matter of Smokey's quarters at the National Zoo. He is housed in a cage similar to the other bears; but his fans have always felt that he should live in a special ranger station home with his uniform and equipment on display. In fact, the question most frequently asked of Zoo attendants is: "Where is Smokey's uniform?"

Junior Forest Rangers have contributed more than $2,500 in pennies, nickels and dimes over the years toward this goal, but this is far short of the sum needed. Now, however, there is fresh hope for Smokey. A major improvement program for the Zoo is about to get underway and Smokey Bear supporters are hopeful that his great contribution will be recognized by building a new ranger station to house the country's most famous bear. They maintain that the educational impact of appropriate headquarters for Smokey will result in the savings every year of forests, wildlife and recreational facilities whose value will far exceed the cost of constructing the new building.

Crazy as a loon

The weird, mournful cry of the loon has given rise to the phrase "crazy as a loon." Don't believe it—the bird is far from crazy!

Dyed gulls

The Massachusetts Audubon Society has started painting and dyeing sea gulls in various colors to check up on their origins. It is part of a project to protect jet 'planes from huge flocks of birds around large airports. Ever since a flock of starlings was blamed for the crash of an Electra airliner last October, there has been concern on this score around jet airports.

Another potential threat are sea gulls which appear to be on the increase in the Boston Harbor area and at other points along the New England coast. Airport authorities are concerned that the gulls may become a serious problem.

Here's how the sea gulls' coloring project works:

Audubon agents, working under a grant from the United States Fish and Wildlife Service, are trapping nesting gulls along the coastal islands. They color the birds' necks and breasts, in some cases brushing on the dye, in others dipping the birds into the solution. Brown is used for Maine birds. Green marks Massachusetts' gulls, and yellow-orange is for Boston Harbor gulls. Cape Cod and Muskegat Island gulls get blue dye, while Martha's Vineyard and the Elizabeth Islands' gulls are black. The color is red for the Isles of Shoals.

If the expanding gull population around the Boston airport (Logan) starts running predominantly to one color and they become a real threat to jet 'planes, then the Audubon officials will know where most of the birds are coming from, and the over-large population can be dealt with at the source.

Evita incendios forestales

"Prevent Forest Fires" — that's what Smokey Bear may soon be saying in Spanish. Mexican forestry officials are considering adoption of Smokey as a forest fire-fighting symbol in their country.

Smokey is already well known in Canada and his introduction into Mexico would unite all of North America as a powerful force in saving the continent's forest resources.

("Smokey" was christened with an "e" in his name, so we'll bow to that spelling.)

Busy bees

In New York State last year, 69,020 colonies of bees were inspected by the Department of Agriculture and Markets to make sure the busy little fellows were kept healthy while producing 12,224,000 pounds of honey valued at $2,017,000, plus $94,000 worth of beeswax. Onondaga led all other counties with 4,303 colonies, but Erie had 4,069 and Jefferson 3,735.

Robert M. McAmmond

The sudden passing of Robert M. McAmmond, the Conservation Department's first Administrative Officer, was a shock to all members of the Department.

"Bob" was a native of the Rochester area and was born in Scottsville in 1905. He attended Rochester West High School and was graduated from Colgate University in 1926.

Mr. McAmmond entered State service in 1938 when he joined the staff of the Division of Employment. From 1942 to 1945, he was with the U. S. War Manpower Commission in New York City. After the war, he became associated with the Department of Health and rose through promotions to the position of Director of Office of Planning and Procedures.

He joined the Conservation Department in August, 1960 and soon made the Administrative Officer job a key post in the administration. In a short time Mr. McAmmond was with the Conservation Department, he made a host of friends.

His great capabilities on his job, his love of people, and his keen sense of humor will be greatly missed.

Surviving are his wife, Florence, and a daughter, Mrs. Statton Rice, III.

Black walnut

The need for increased management of small woodland holdings offers timely and practical suggestions for the cultivation of a valuable timber crop—black walnut. This wood is in increasing demand, but the supply of good quality timber is in steady decline. The tree is comparatively easy to cultivate, and, properly managed, brings sound dividends. The grower must choose between timber and nuts for his crop; he cannot have it both ways and have top quality in either. The best quality wood is in straight, tall, clear-boled timber trees.

Selection of a suitable site is of first importance but land suitable for a black walnut grove may be found on almost any farm. A small, well-drained, uneroded tract is needed, perhaps in a wooded area located well away from farm buildings or fences so that nails or wire will not become embedded in the most valuable parts of the trees.

Black walnut trees may be grown from nuts collected from well-formed trees in the locality of planting, thus eliminating cost of seedlings and assuring dependable growth where there is precedent for the species. Mixed plantings with other hardwood species, such as ash, oak, or maple, are recommended for best propagation of black walnut for timber. This is because foliage of the walnut is less dense than that of most other hardwoods and doesn't shade the lower branches sufficiently to encourage early natural pruning.

Two U.S.D.A. bulletins, "Planting Black Walnut for Timber" and "Selling Black Walnut Timber," are available from the Forest Service, U. S. Department of Agriculture, Washington 25, D.C.

MSX

The suspected killer of oysters in the Delaware-Maryland area has been identified as an animal parasite and given the name Multi nucleate Sphere X, or MSX, for short. According to biologists at the Chesapeake Biological Laboratory, the organism is not harmful to human beings, only to oysters.

Much more remains to be discovered on how MSX affects oysters but a close parallel seems to be the malarial parasite as it reacts in humans.

Fourteen sampling outposts have been established to keep track of the spread of this organism along with collecting information on other oyster predators such as mud worms, oyster drills, crabs and fungi.

Trees as an avocation

Albert G. Eberley of Whitesboro, is a carpenter-contractor who uses trees in the form of lumber to build homes in the suburbs of Utica. He estimates that during twelve years of contracting, he has used about half a million board feet of lumber at the rate of some 10,000 board feet per two bedroom home.

At the same time, Eberley is growing about 60 times that amount on his tree farm near Forestport. On what once was virtually worthless, worn out farm land, he has established a 600-acre forest by planting more than half a million trees during the past 34 years.

Foresters estimate that an acre of managed red and white pine trees should produce about 50,000 board feet by the time it is 75 years old. This adds up to an expectation of 30 million board feet from Mr. Eberley's 600 acres of plantations — quite a contribution for one man to America's needs for wood.

Eberley's tree planting began back in 1927 when he bought a 423-acre run down farm for the specific purpose of planting trees for an eventual commercial crop. Three later acquisitions brought his total holdings to 650 acres, including 50 acres of natural woodlands. In 1927, he planted 100,000 red and white pine; and during the next 10 years, he planted an additional 400,000 trees of the same species. In recent years, he has planted smaller amounts, including some spruce, balsam and Scotch pine for Christmas tree purposes.

With the help and guidance of foresters of the Herkimer office of the Conservation Department under the Forest Practice Act, the Whitesboro builder is taking all necessary tree farming steps to insure a high quality timber crop production.

Fallout index

Deer antlers have been found to be a useful scientific gauge for determining radio-active fallout. During the summer the new antler develops quickly, while the animal is feeding on leaves and twigs. In this browse, radio-active strontium fallout has been absorbed. As the food is digested by the animal, strontium is deposited in the calcium of bones and antlers. In the skeleton itself, growth is too slow for much strontium to be shown. Antlers, however, grow very rapidly and become a good record of each year's amount of strontium fallout.

In England and America shed antlers are being collected that were known to have been shed in specific years. Thus far, comparisons have been startling. For instance, antlers collected in Scotland in 1957 contained more than eleven times the amount of strontium as those found in 1952.

Goose muscles

The wild goose has some 12,000 muscles—10,000 of these control the action of its feathers. And we think airplanes have a lot of parts!

County Forestry Programs

There are 21 counties now actively participating in New York's County Forestry Program, under which technical assistance and matching State funds of up to $5,000 annually are available for reforestation and forest management on county-owned land. They include: Allegany County (with 2,043 acres of county forests), Broome (181 acres), Cattaraugus (1,840), Chautauqua (732), Chenango (384), Erie (2,855), Essex (2,118), Jefferson (4,122), Lewis (2,773), Madison (425), Oneida (3,743), Onondaga (2,929), Oswego (2,294), Otsego (3,492), St. Lawrence (4,160), Saratoga (3,582), Schoharie (773), Schuyler (55), Steuben (1,206), Wyoming (692), and Yates (327). Nine other counties also have planted forests since the program began, although they have not applied for State aid during the past year. They are Clinton, Franklin, Fulton, Genesee, Montgomery, Putnam, Seneca, Sullivan and Tompkins.

The County Forestry Program was initiated in 1929 as a supplement to the State's reforestation activities, which were then getting underway on a large scale. State reforestation areas must be 500 acres or more but under the law, smaller parcels that meet all the requirements of a reforestation area can be taken over by the counties and put to productive use with help from the State. Seedling trees from State forest tree nurseries are provided without charge.

Reforestation of idle or marginal land, not suitable for farming, helps to protect the watershed, prevents soil erosion and the sale of forest products can be a source of income for the participating counties. Fourteen counties so far have reported an income from the sale of timber, pulpwood and Christmas trees. They are Allegany, Chautauqua, Erie, Essex, Jefferson, Montgomery, Oneida, Onondaga, Oswego, Otsego, St. Lawrence, Saratoga, Schoharie and Wyoming.

As of September 30, 1960, the State had put up $853,514 in matching funds under the County Forestry Program. This money has been used by the counties for the purchase of land for reforestation, labor for tree planting; thinning, pruning and other management practices; equipment, fire protection, insect control and other expenses. In addition to the State funds, the counties have spent a total of $1.7 million on the program.

Short-haired background

The German short-haired pointer was developed from several canine breeds — the old Spanish pointer, bloodhound, foxhound and English pointer.

Turkey prospects for '61

Wild turkey hunting in New York—the first since colonial times—began in the fall of 1959. That year, Allegany and Cattaraugus counties were open to hunting and several thousand hunters turned out to harvest some 250 of these grand game birds. In 1960, a similar season produced as much enthusiasm for turkey hunting but only an estimated 150 birds were taken. This was not because there were fewer birds but the effect of the 1959 season tended to make the turkeys much more wary. The flocks were more widely dispersed and much harder to approach.

The 1961 season looks good with the turkeys still expanding their range and new flocks popping up in new range that has now become suitable for them. This year Chautauqua and Steuben counties have been added to the open season area. These counties do not have as much turkey habitat as Allegany and Cattaraugus but they do have populations that warrant hunting. Further postponement of hunting in these counties would probably not assure further increase because populations are already near the carrying capacity of the range.

This year the five-day turkey season will open October 23, along with pheasants and rabbits, to avoid too great a concentration of turkey hunters. This is better for both the sport and the turkeys. Some have advocated an earlier opening with the best interests of the turkey in mind, but there are good reasons for the later opening. Turkeys nest late and grow slowly. With too early a season many birds that are hardly mature would be subject to the gun and even the early hatched broods are at a stage where they are still gaining weight rapidly.

We think it promises to be a good turkey season with more places and more birds to hunt. Also wilder birds, harder to harvest.

Don't forget, if you hunt and are successful, Department Wildlife Biologists will appreciate examining your bird at one of the several checking stations set up in the open season area for this purpose.

Conservation by correspondence

A five-lesson correspondence course in the basic fundamentals of wildlife law-enforcement and fish and game management is being offered at the request of the New York State Conservation Department, by the State College of Agriculture at Cornell University.

The course is designed for persons interested in the field of conservation, including sportsmen and outdoorsmen who want to gain a better understanding of the history and philosophy of conservation and wildlife management.

The five lessons, mailed out every ten days cover such topics as (1) general introduction, (2) history and development of wildlife, (3) history and development of wildlife management, (4) ecological principles as a basis for modern management, and (5) life history of important New York plants and animals.

Examination sheets accompany each lesson and participants fill out the exams, and forward them to Cornell before receiving the next lesson. Each paper is corrected and returned with appropriate comments and suggestions.

The course is available to the public at a total cost of $10. Applications for information should be directed to the Conservation Department at Fernow Hall, Cornell University, Ithaca.

Belleayre

A new ski development for novices is planned for the State-owned Belleayre Mountain Ski Center located between Pine Hill and Highmount in Ulster County. There will be a new base lodge, double chair lift, new ski trails and additional parking areas.

The new development is expected to be open to the public during the 1961-62 skiing season. The Belleayre Ski Center first opened to the public in 1950 and is now double the original size.

Belleayre facilities presently include a 2,950-foot chair lift, two T-bar tows, two rope tows, fifteen trails for experienced skiers, a cafeteria and ski school.

A wildlife crop

Simple but effective method of producing an additional crop on the land—"Farmers' Bulletin No. 2035"—15 cents, from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C.

Stocking green heads

The mallard duck or "green head" is one of our more popular waterfowl species. Few waterfowl enthusiasts realize that New York's contribution to the wild propagation of this species began in 1934. Prior to that, mallard nesting in New York was only occasional.

As early as 1920, a good-flying strain of mallard had been acquired by the Sherburne game farm. Here some artificial propagation work was done and soon the Chenango Valley boasted a small, huntable population of native birds. In 1934, a flock of wild-trapped mallards was secured from Wisconsin and these were interbred with selected birds from Sherburne.

Meantime, another strain of mallard-escaped call ducks, private game farm stock and ornamental stock was quite prevalent around the State but most of these had lost most of their wild characteristics and were even too heavy to fly — for any great distances anyway.

By 1942, over 8,000 of the New York strain mallards had been stocked in various areas of the State. Birds were released at ages from ducklings to paired adults, in a variety of habitat considered suitable.

An analysis of band returns and other data indicated that by 1952, the species was well established as breeders — producing a harvestable supply each fall for the gunners, and yet adequate breeding pairs were returning from migration each spring.

With mallards well established, the artificial propagation and stocking program ended in 1952. It is a credit to modern methods of wildlife research, artificial propagation and management that one more of our wildlife species is making a substantial contribution to outdoor recreation.

Bats and rabies

Bat rabies is posing an increasingly difficult health problem in New York State and throughout the nation. It was first reported in Florida in 1953 and has since been reported in at least 24 species of bats from 31 states.

The first reported case of bat rabies in New York State occurred in Rensselaer County in 1956. Since that time cases have been reported from Allegany, Oneida, Queens, Rockland, Saratoga, Schenectady and Westchester counties. The State Health Commissioner has urged all persons to: (1) Avoid handling abnormally behaving bats; (2) if bitten, immediately notify your physician who will decide whether you should be given anti-rabies treatment; (3) if possible, catch the bat and give it to your local health officer, who will turn it over to the State Health Department's Division of Laboratories and Research where a reliable diagnosis can frequently be made in a matter of hours; (4) teachers should be aware of the problem of bat rabies and maximum care should be taken when handling bats in classes; (5) because healthy bats can carry the rabies virus, the Department considers all bats that have bitten persons to be rabid until laboratory tests have shown they are not.

The State Health Department provides rabies diagnostic facilities, consultation and advisory services to physicians.

Jet patrol

Law Enforcement personnel in Region No. 3 are pleased with the operation of their new jet propelled water craft. It has already proved itself much more adaptable than previously used patrol boats. The operator, Game Protector Floyd Hoover, points out that although it is 20 feet, 2 inches in length with a 7-foot, 10-inch beam, it draws only 2 inches of water when running, and 8 inches while at rest. The craft can be maneuvered into shallow and weedy areas where conventional propeller boats cannot travel. There has been no need, as yet, to open it to full throttle, but it can cruise steadily at 40 miles an hour.

Assigned primarily to Cayuga Lake, it can be loaded and moved more easily than smaller propeller driven boats and it has already seen service on Oneida Lake and will be used on other waters of the Region as needed.

"Adirondack Profiles"

William L. Wessels, contributor to and good friend of THE CONSERVATIONIST, has joined the illustrious company of Adirondack authors. Just out is his "Adirondack Profiles," published by the Adirondack Resorts Press, Inc. of Lake George, and distributed by the Hamilton Advertising Agency of Blue Mountain Lake.

Mr. Wessels, who did "Keel Boats" for us in the October-November, 1959 issue and who frequently assisted us with research in our delving into Adirondack lore—to say nothing of acting as the genial host of the old Blue Mountain House at Blue Mountain Lake, has in recent years, been director of the Hamilton County Publicity Bureau.

The Blue Mountain House, the Adirondack Museum at Blue Mountain Lake, and Mr. Wessels have to be considered all in one thought because all three have a bearing on the culmination of "Adirondack Profiles." The Wessels developed the hotel into a business success with Mrs. Wessels as the charming hostess. Mr. Wessels, exercising a hobby of collecting old prints of guides, old hotels and other Adirondack lore, and tramping over the mountains, climbing the higher peaks and making a wide acquaintanceship of many people, realized that a wealth of old-time Adirondackiana was fast disappearing. To preserve such memories he conceived the idea of organizing the Adirondack Historical Association. As first president of the Association, Wessels negotiated the purchase of land in the village of Blue Mountain Lake, and plans were drawn for a museum.

Mr. Harold K. Hochschild succeeded him as president of the Adirondack Historical Association which purchased the Blue Mountain House property and began the building of the Adirondack Museum, in the spring of 1955.

Mr. Wessels has modestly written of the Museum and placed his account at the end of his over 200-paged book. Seventy-eight illustrations are included. The book covers all of the Adirondacks with profiles of men of both local and national fame who have made Adirondack history. Mr. Wessels claims it's not a history but an effort to recapture "for today and tomorrow the great figures and times of the past."

The foreword is by Lowell Thomas who says in part: "Mr. Wessels gives us a brilliant portrait of New York's fabulous mountains, past and present, as he sketches his 'Adirondack Profiles'."

"Adirondack Profiles" is, indeed, a worthy volume to be added to the treasures of the Adirondack book shelves.— ROLAND B. MILLER

Grouse cover

Ruffed grouse are found in most types of forest cover. However, they prefer mixtures of hardwoods and conifers to pure stands of either type.

Several pointers for increasing populations have been set forth by game researchers and managers. Among these are underplant aspen with conifers for cover, leave ironwood standing for winter food, maintain alder thickets for summer brood cover, keep some openings in the forest for both food and cover, light grazing of off-site aspen by livestock.

Washed up?

Increased use of synthetic detergents by Illinois housewives may be related to decreased catches of carp by commercial fishermen. Carp were once an important source of revenue to commercial fishermen on the Illinois River.

A steadily declining catch since 1950 has coincided with declining numbers of fingernail clams on which carp feed.

The increased use of synthetic detergents and the detergent release into the Illinois River exactly parallels the decline in numbers of fingernail clams. The detergents pass unchanged through sewage plants.

Pheasant banding — 1961

This year, 152,000 pheasants were released in the hunting covers of New York; 126,000 of them wearing serially numbered bands, bearing the request that the taker notify the Conservation Department. Department game men want to know the band numbers, the dates, places of recovery, and the nature of the recovery—that is, whether the bird was shot, found dead, killed by a car, predator, farm equipment or some other circumstance. The band returns received this year will serve as a guide in planning our stocking programs for the next several years. Lack of returns will probably have to be interpreted as a weakness or failure of the stocking program. BE SURE TO REPORT YOUR BANDS.

Nearly all cock pheasants raised on the State game farms and those hens which were released in the cock-hen hunting counties were banded. Some of the stock was released in the summer months as half grown birds; the remainder held for release just prior to the hunting season. These two groups totaled nearly 54,000 birds of which 42,000 were banded. Some 8,000 banded surplus breeders were released in May — cocks and hens that were used for egg production on the game farms this year.

Sportsmen's club pheasant rearing projects scattered widely over the State have turned out some 34,000 pheasants and 20,000 of these half-grown birds were banded. This is a tidy addition to the

number of banded information carriers.

One of the biggest phases of this year's pheasant banding program included nearly 56,000 4-H. Club-reared birds. Both the cocks and hens of this group were banded at seven weeks of age. Since the banding of these birds was supervised through the County 4-H. Club Agents, small packets of bands had to be parceled out to the 52 counties conducting 4-H. Club rearing projects. The bands were provided already opened to make it simpler for the youngsters to put them on properly without special pliers. To keep the bands in numerical order the series were taped together, but first the bands had to be degreased so the tape would stick. Thus one thing led to another and the total sorting, handling and recording of the band series became a major chore. Let's hope that the sportsmen will do their share and report the recoveries of these pheasants to the Conservation Department. — "CHUCK" MASON, DIRCK BENSON

Gypsy moths

The European gypsy moth is one of the most damaging insect pests ever to invade New York forests. This has been the heaviest gypsy moth infestation that New York has had in recent years, in spite of continuing efforts to bring the pest under control. Next year may be even worse. It was under aerial and ground attack in eleven counties of the State during May and June, when nearly 50,000 acres of private and State-owned forest land were sprayed with insecticide. The spraying operations were carried out in Albany, Dutchess, Essex, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Ulster, Warren and Washington counties. Meticulous care was taken to avoid croplands, pastures, residential districts and fishing waters.

Trapping operations to determine the present extent of gypsy moth infestation are now being conducted by the Federal government in co-operation with Conservation Department personnel throughout the Adirondacks and in Broome, Chenango, Cortland, Delaware, Franklin, Herkimer, Jefferson, Lewis, Madison, Nassau, Oneida, Onondaga, Orange, Oswego, Otsego, Rockland, St. Lawrence and Sullivan counties, as well as the five boroughs of New York City.

The gypsy moth was imported to this country in 1869 by a French astronomer in Medford, Massachusetts who had a scheme to cross the Japanese silkworm with the European gypsy moth and thus develop a silk-producing worm that would survive the rigors of northern winters. During the course of these experiments, a handful of gypsy moth larvae escaped from his laboratory. Within 20 years, they became so abundant in the Bay State that the larvae had completely defoliated fruit and shade trees in an area of 359 square miles and were actually swarming into homes.

Control measures were instituted at that time, but the insects continued to multiply until they infested all of New England and eventually New York State. They are gradually moving westward. Transportation is no problem for the well-named gypsy moth, because newly-hatched larvae are wafted great distances by the wind, probably the most important factor in spreading the pest.

Conservation Department personnel are also conducting aerial defoliation surveys to find out how many acres of trees have been damaged or killed by the gypsy moth. Favored food for the larvae include the leaves of oaks, birches, poplar and fruit trees, while older larvae will eat pines, spruces, cedar, hemlock and beech leaves. While one defoliation will not usually kill a tree, it will weaken it and make it susceptible to attack by other insects or plant diseases. Repeated defoliations over two or three seasons usually result in the tree's death.

During its larval stage, the gypsy moth is a blue-and-red dotted caterpillar, measuring from 1½ to 2½ inches long when mature. The female moth is white with blackish bands across the wings and has a wingspread of about two inches. The male moth has a brown body and light to dark brown wings with black markings and a wingspread of about 1½ inches.

Waterfowl management

Waterfowlers will be interested in a new bulletin (No. 2144) published by the U.S. Department of Agriculture and entitled "Managing Farm Fields, Wetlands and Waters for Wild Ducks in the South." Much of the information is applicable in other areas of the country.

The bulletin is available upon order to the U.S.D.A. at 10 cents per copy.

Jet-age wildlife

Recently, starlings were found to be responsible for a turbo-prop 'plane crash that killed 62 passengers. A flock, taking wing from the runway were sucked into the air intake ducts. The Federal Aviation Agency is seeking to research the starling-aircraft problem. Wildlife biologists will study the birds' behavior and habitat requirements in an effort to rid airports of feeding and roosting flocks.

Rabbits that live around airports may be the next problem. There have been reports of bunnies sucked into jets during airplane takeoff runs.

Salt-water license

Salt-water sport fishery research and development programs are badly needed in most coastal states. Fishing from boats, jetties, piers, beaches, bridges, etc. ranks among the most popular of outdoor recreation activities in coastal marine areas. Opportunities for access to coastal waters for fishing are fast disappearing as private developments take up the shoreline. At the same time, coastal marsh and estuarine habitat, vital as breeding and nursery grounds for salt water sport fishes, is fast being obliterated.

The harvest of fish is increasing rapidly and the time is no longer remote when an increasing number of decisions will have to be made concerning who is to harvest what species and how. If we are to keep pace with growing fishing pressures on coastal sport fishery resources, and assure future good fishing, the states must begin to provide more abundant fishing facilities and to develop and maintain continuing research programs.

Salt-water sport fishing licenses represent the only practical means presently known whereby continuing revenues can be raised. Several national surveys have demonstrated that there is widespread recognition of this, coupled with admitted salt-water program needs.

At the 1957 national convention in Washington, D.C., the National Wildlife Federation adopted a resolution urging that all coastal states adopt salt-water licenses. The Izaak Walton League of America adopted a similar resolution at its 1959 annual convention in Philadelphia. Together, these two national sportsmen's organizations represent the vast majority of organized sportsmen, some 1½ million strong.

In 1960, in an effort to determine the actual extent of alleged opposition, define it and solicit any alternative proposals of substance, the Sport Fishing Institute sent questionnaires to 1,461 known sportsmen's clubs located in 17 coastal states.

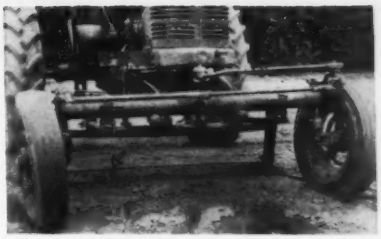
The questions were: (1) Does your club favor development of a substantial salt-water sport fishery program by some agency in your state? Yes, 93%; no, 6%; no opinion, 1%. (2) Does your club believe that research aimed at managing the fisheries should be an important part of any state salt-water sport fishery program in your state? Yes, 94%; no, 5%; no opinion, 1%. (3) Does your club believe that development of fishing facilities such as shore and bay access, bridge catwalks, fishing piers, etc., is needed in your state? Yes, 93%; no, 6%; no opinion, 1%. (4) Which state agency does your club believe should administer the program? Fish and Game Department, 23%; Conservation Department, 5%; Commercial Fisheries Department, 2%; Combination, Fish & Game and Commercial Fish, 64%; other (Coast Guard, Federal government, Park Dept.), 1%; no opinion, 5%. (5) Should a salt-water fishing license be instituted in each state to finance salt-water sport fishery programs through an earmarked fund? Yes, 23%; no, 21%; no opinion, 56%. (6) If your answer was "yes," what annual fee does your club favor? $1, 1%; $1.50, 7%; $2, 45%; $3, 35%; $4.25, 1%; other, 11%. (7) Would your club favor reciprocal fishing privileges with other coastal states? Yes, 89%; no, 6%; no opinion, 5%.

The survey indicated that most organized salt-water sport fishermen are realistic, alert to needs, and many accept salt-water licensing as a logical and feasible means of raising funds on a continuing basis for salt-water sport fish conservation programs. In short, the majority attitude of the organized salt-water anglers can be fairly summed up that "The average U.S. sportsman is ready to pay for value received."—Sports Fishing Institute

Root-pruning tree seedlings

A trimmer knife — the last metal to touch sheet paper in the paper mill before it is shipped — is now used to assist in the growing of trees. It is used to root-prune the tree seedlings in the forest tree nursery. These very same pruned seedlings may well grow into trees to make more paper for the knives to trim.

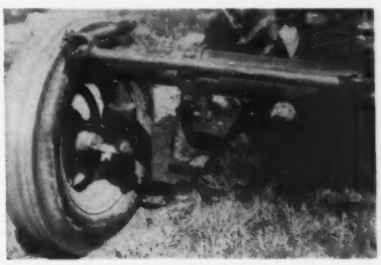
The International Paper Company cooperated with E. G. Terrell of the New York State Conservation Department's tree nursery at Saratoga Springs in his development of a tree seedling root pruner. As a result, an important step has been taken in the field of forestry to keep America's supply of trees equal to the demand for wood and wood products.



Arrow points to blade

The work done by the machine devised by Mr. Terrell results in advantages in the transplanting and growth of seedlings through the pruning of the roots. The cutting edge used is a mill-discarded paper trimmer knife blade.

Root pruning of tree seedlings before field planting is desirable, yet impractical as a hand operation when millions of seedlings are involved. Thus, it must be done while the little trees are in the beds at the nursery. Any number of systems have been tried. By hand, by horse and by tractor with different types of blades and "cross-cut saws." All were unsuccessful or impractical. Now for the first time, in this area at least, a successful method has been devoloped at the Saratoga Nursery.



The knife blade at work

Root pruning is important for two reasons: (1) It makes the physical task of removing the seedlings from the beds much easier since it does not require such great depth of digging. (2) Pruning the tap root terminates the growth of this main root, which results in the seedling developing a much more fibrous root system, and also the shorter taproot requires less depth in the replanting.

Pruning at the Conservation Department's Saratoga Nursery, the largest in the northeast, is done on seedlings at the end of the second year or at the beginning of the third. In addition to the benefits mentioned above, pruning allows more flexibility in the growth-shipment ratios since seedlings can be carried over past the three-year mark only if pruned.

At present, pruning is limited to the red pine, *Pinus resionsa* and Scotch pine, *Pinus sylvestris*.

Letters to the Editor

Hungry bears

Dear Sir: Please feed the bears. If you were hungry, you'd eat out of garbage cans, too. Anything will help these animals. Don't be so cruel. They are hungry and that's that! We feed everybody across the oceans. Why don't we feed our animals?

I am downright mad.

June Cooper—(an irate citizen),
Rochester

P.S. I love animals; all of them.

• *We're kinda mad too—mad at people and communities that create and tolerate open garbage dumps. These are the attraction—making bums of our bears, never adverse to cadging an easy meal. As for their hunger, the bears managed very well in the wild before the Adirondacks ever saw a garbage dump.—Editor*

Bounty the bear

Dear Editor: Why are the black bear here in the Adirondack Mountains protected by law, the same as the deer? They have gotten to be a nuisance and should be done away with and a generous bounty paid for each one killed.

Mrs. James Flynn, Long Lake

• *In order to preserve our wildlife heritage, the Conservation Department, through the Conservation Law, protects big game, which includes the deer and bear. The fact that some of these animals become a nuisance in certain areas does not justify the removal of this protection. However, the Department, recognizing this type of problem, does provide a limited amount of service to alleviate problems of this nature.*

If protection, as provided by the Conservation Law, was removed in the case of the bear, it would not be long before this species would become quite rare in the State. The fact that the bear are very common in the Adirondack Mountain area provides a great number of people with the opportunity and thrill of seeing this big game animal which they otherwise would not have. Certainly, if all the facts are taken into consideration, we are sure that the positive values would far outweigh the negative ones. In addition, we have the responsibility to be sure that this species and others are protected and preserved so that future generations will be able also to enjoy them.—Albert G. Hall, Chief, Bureau of Game

More about Sir William

Dear Sir: My attention has been called to the article, "Fly Fishermen's Bicentennial 1761-1961," by Austin S. Hogan in your April-May issue. The thesis of this article is that Sir William Johnson began this sport —fishing with flies—in 1761. As editor of the *Sir William Johnson Papers*, published by the State of New York I have been asked regarding this statement and as to Sir William Johnson's priority.

That Sir William enjoyed fishing and hunting there is no doubt. As to fishing *with flies*, as distinct from other forms of fishing, I have been unable to find any evidence, nor in fact any references thereto in the standard biographies. The writer cites Stone, W. L., *Life and Times of Sir William Johnson*, giving no page reference, but I have been unable to find any reference to "fly fishing" in this early (1865) biography.

The other point made by the writer is that 1961 is the bicentennial of Sir William's (fly) fishing. This, too, has no documentary basis, but is due to an incorrect deduction in regard to Sir William's fishing lodge. On this point, I can hardly blame your author, for he has followed the statements in Stone and several other secondary writers, that Castle Cumberland—a dateline used in 1761 by Sir William—was the name of Sir William's fishing lodge. Careful study of the documents show that "Castle Cumberland" was the early name for the site of Johnstown, where Sir William was making improvements even before he built Johnson Hall. Hence, 1761 is much too early for Johnson's fishing lodge.

Now, there is good documentary evidence for Sir William's fishing activities. In 1769 he acquired property at Sacondaga and, in the following year 1770, built a lodge there, which was rather elaborate, with an arcade and several rooms and about 300 acres of land. This summer house he maintained until his death and it was called "Mount Joy." Later it was called "Summer House Point," being on the raised point of land at the junction of Mayfield Creek and Kenyetto Creek. It is now under the waters of the Sacandaga Reservoir. Several letters to Sir William in 1770 refer to the "fine fishing" and trout at this lodge. The inventory of his possessions a short time after his death lists at Mount Joy, "1 small box with fishing tackling — — .8 ," and "1 fishing rod in a bag & belt &ca." So we have no doubt of fishing being carried on there.

The other fishing place of which there is record was at the later site of Northhampton, or "Fish House." Before Sir William's death, about 1771, this was transferred to his nephew, Guy Johnson, who included it in his claim for indemnity, as a Loyalist, after the Revolution. It was a small affair, "A House consisting of 2 rooms & a garret a small imp(rovemen)t." A visitor in 1803 called it "a little log tenement." It was referred to as "the Fishing House on Northampton Patent" and as "Sacondaga Lodge." After the Revolution it was sold by the Committee of Sequestration and came into the hands of a Major Nicholas Fish. The name "Fish House" was not used by Sir William, but dates from this later period.

Hence, if there is to be a bicentennial of "angling," or fishing with rod and tackle, based upon the fishing lodges of Sir William Johnson, it may have to wait until 1969-70.

Milton W. Hamilton, Senior Historian,
State Education Department, Albany

• *I regret very much that the article "Fly Fishermen's Bicentennial" caused Dr. Hamilton so much concern. If he will read paragraphs No. 1 and No. 2 again he will note that I very definitely differentiated between Castle Cumberland and the* fishing house *on the* Sacandaga.

My references to the date of the establishment of the fishing house are given in Stone's 1865 edition, "Life and Times of Sir William Johnson," Vol. 2 pg. 163-4 and J. R. Simms' "Frontiersmen of New York," 1882 Vol. 1, pg. 258. Mention is also made in Simms' "Trappers of New York," 1850 and Pound's "Johnson of the Mohawks."

My error seems to be that I assumed Castle Cumberland was located in the Town of Broadalbin and was an earlier name for the Mount Joy Pleasure House. For this my apologies.

Insofar as I know, there are no printed or manuscript references to fly fishing in the United States before 1775. To assume, however, that there was no fly fishing in the United States before then, is unreasonable. Johnson was the complete angler, undoubtedly using bait as well as flies. After a long and careful study based on a projection of the typical British fly fisherman in America and a check of the activities and backgrounds of a great number of anglers of the Colonial period, I came to the conclusion that William Johnson was our first fly fisherman. Reconstruction is never proof positive

but under the circumstances, I feel my conclusion is valid.

Dr. Hamilton's additional information and quotes concerning the local history of the Sacandaga region are highly interesting, but have no bearing on my statements concerning the establishment of the Sacandaga fishing house in 1761. Any further information from Dr. Hamilton concerning William Johnson's life as a sportman, I know will be welcomed by New York's hunters and fishermen.—Austin Hogan, Johnstown

Slide mountain

Dear Editor: Alf Evers' article, "Slide Mountain—King of the Catskills," came at the right time, for I had just finished rereading John Burroughs' account of his association with Slide Mountain and was still caught in its spell. Burroughs' work captures the charm and atmosphere of the mountain, while Evers' supplies some rather interesting historical material.

Burroughs compared the mountain to a "gigantic horse" with its head down grazing so that the descent from the shoulders and down the neck was very steep.

Slide Mountain almost lost its name to that of the old naturalist. Sometime after his death, a group of prominent people attempted to have the name changed to Burroughs Mountain, since he was the one that introduced it to the world. However, Julian, his son, refused such permission, on the grounds that, he felt, his deceased father would have preferred the mountain to retain its original name, for that was how he knew it.

I am glad to see these historical articles appearing in THE CONSERVATIONIST from time to time. I think they do a lot to enrich a person's appreciation of the natural treasures of his native State.

Ed. Reid, Wanakena

More on Slide Mountain

Dear Sir: The June-July issue of THE CONSERVATIONIST was of especial interest because of Alf Evers' complete coverage of Slide's natural history and human history.

The picture of Slide and the lovely Big Indian Valley was taken from my porch. I have been looking at that view for more than fifty years and it still gives me the old thrill.

The article on the mosses of New York is worth many times the price of the magazine. I have long been interested in that genus of plants and use some varieties in the miniature arrangements I make. And this monograph on the subject offers fascinating information I have sought hitherto in vain. I'd like to meet the author and thank him personally.

Timothy Goodyear Remick,
Pine Hill

Gentlemen: I enjoyed my friend Alf Evers' article on Slide Mountain, to which I should like to add a footnote for the interested walker: Just as you start down the Slide, a rock ledge runs around the mountain top to the left. Not far along this ledge is an over hanging rock. Under this is a memorial bronze tablet, stating that it was under this rock that John Burroughs slept on trips over the mountain.

I had better add that with the State lean-to at my disposal, my nights on Slide Mountain were more comfortable than the naturalist's.

The virgin stand on Cornell and Wittenberg presents an experience rare in the East. There you may see what this section was like thousands of years before man went to war with nature and there you will have a vision of what it will be like again thousands of years after man has again made his peace with her. For man has no choice; either he must reintegrate himself with nature or she will simply dispense with him. Nor can he ever find contentment until he does.

Or will an atomic war bring him back to his primal mother sooner than he anticipates?

Richard Crane, Woodstock

Crossbows

Dear Sir: Would appreciate some enlightening on the forbiddance of the use of the crossbow for hunting, that is, for woodchuck, to me, an ideal and sporting way with little risk or annoyance to anyone.

The law, I believe, forbids any mechanical draw or release mechanism so I believe it covers the arbalest or crossbow.

Since the above rodent is not protected, would it still be out of line with the use of this equipment?

Bart Kate, Woodbourne

• *There are several reasons for the Department's opposition to the use of the crossbow as a hunting weapon. Most important, we feel that this weapon in the hands of an amateur would most definitely create a safety hazard. It is very lethal and lends itself to promiscuous use by those who might desire to use it in such manner. For example, it can be fired from an automobile and, being silent, it would become an enforcement problem. An officer answering a complaint of jacking, poaching, road hunting, etc., would be at a loss to pinpoint the immediate area in this type of activity if we were to allow its use.*

The longbow, on the other hand, is not nearly so lethal and one of its redeeming factors is that it becomes a pretty awkward weapon to fire from an automobile.

We feel very strongly on this matter and would oppose any legislation that would allow the use of a crossbow for hunting purposes.—William J. Goodman, Chief, Bureau of Law Enforcement

Natural history show

Dear Sir: What to me is a very unusual situation is occuring here.

From the two enclosed photos you can see what has happened. A type of hornet is constructing a nest on the window of the water works filter room here in Hyde Park. From the outside photo you can see how the nest was started way up on the screen and worked downward over edge of screen and then the main part built on the glass. The unusual phase is, that from the interior of the building, one can observe the life of these hornets through the glass. It is as though the ordinary nest were sliced vertically in half and continues to function.

These hornets are a large, black, heavy-bodied insect with the white bands about their abdomens and some other white markings around heads and antennae; they appear to me to be a type of yellow jacket but a very large species. I don't care to catch one to measure it, but they appear to be perhaps 1¼ inches long.

Due to interior structure, photography is difficult but I am enclosing a photo I took through the window into the interior of the nest.

I am sending this same information to *Natural History* on the off chance that some one specializing in this sort of thing might care to come here to observe.

One group of hornets tends the grubs in the upper portion of the nest while another group appears to be continuing to enlarge the nest.

Malcom Kinney,
Water Works Superintendent, Hyde Park

Oneida algae

Gentlemen: This Saturday, 24 July, found me fishing on Oneida Lake. I was surprised to find the surface of the lake unusually populated with dead fish of all kinds—walleyes, northern pike, bass, perch, etc. This situation seemed to predominate from Cleveland to the south shore. I would like to know the following: (a) What caused the sudden death of so many fish? (b) Is it advisable to eat fish caught in the lake at this time? (c) How long do you estimate this condition to continue?

Donald Zulch, Oneida

• *Oneida Lake appears this year to have experienced on over-normal growth of algae. Being an exceedingly rich lake, it usually has heavy growths which will vary from season to season and in species, due to temperatures, rainfall and general water flow and distribution.*

Certain years in the past have produced algae in such abundance that under certain wind conditions they have been packed in on shore so heavily that light was shut off from near the surface, causing those deeper in the water to die, with removal of oxygen from the water. Such an occurrence in 1944 resulted in the death of millions of fish on the north shore.

With any algal bloom it would not be surprising to find similar conditions occurring in localized areas causing the death of some fish. Fish heavily coated with scales such as pike-perch and perch may float for weeks before decomposition is sufficiently advanced so they break up and sink. During such time they may be carried here and there in the lake by winds, waves and surface currents. We recently had a check made on the lake and the main basin was found in good condition. Also, although there are quite a number of dead fish on the lake, it is an extremely small percentage of the fish present.

We feel that, aside from a few dead fish always present in a lake, the others were killed by low oxygen from algae decomposition in localized areas. Such conditions are local and dependent upon the algal abundance, drift, etc., and are probably not persistent for any great length of time, being destroyed by wind and wave action. There would be nothing wrong with the fish taken by angling.—G. E. Burdick, Senior Aquatic Biologist

Ed. note:—See article, this issue, entitled "Algae and Pollution."

Chickadees

Dear Sir: At our bird feeding station, which is the delight of our lives in winter, we had, last winter, the most entrancing bird. It is almost completely white, except for pearly-gray wings and blackish spots in front of its eyes. We believed it to be a chickadee 'though it does not at all resemble one except in size and shape. So we went out to listen to its call. Sure enough! It is a chickadee and the loveliest little bird you ever saw. Unfortunately, he is either a very infrequent visitor or else we simply do not happen to see him while he is there. In between glimpses, we worry greatly as to his fate. But yesterday he appeared again hale, hearty, almost pure white and very shy. Last year we also had a freak chickadee who looked as if someone had dumped pepper and salt on him as he was polka-dotted all over. We are wondering whether this year's white bird is of the same strain. "Polka-Dot" has not appeared this year. Have any of your personnel or readers had a similar experience with chickadees?

We feed many kinds of birds, from the lovely, voracious grosbeaks with their epicurean taste for sunflower seeds and nothing else—to nuthatches, dear, ever-charming chickadees, tree sparrows and many others. For the first time this year, we have had purple finches, a delight to see in their magenta-dipped coats.

Mary-Alice D. Burrows, Crown Point

• *You certainly have a unique collection of chickadees. In all my ramblings through the woodlands of New York, and I did a lot of that before I got snowed under with magazine copy—I do not recall ever seeing chickadees in the color phases you have described, but whether in their formal or informal attire, I quite agree that there is no more captivating or cheery bird in the world.—Editor*

The early days

Anselm Parker, Adirondack Guide

Dear Editor: I joined the staff of the old Conservation Commission in about November of 1918 and left in the early summer of 1921 to take a position with the museum of the San Diego, California, Natural History Society. The Hon. George D. Pratt was Conservation Commissioner while I was there. I believe it was he who sparked the original CONSERVATIONIST, of which I happen to possess all four volumes, bound—a gift to me by Mr. Pratt. My immediate boss was Clinton G. Abbott, who edited the old CONSERVATIONIST. Miss Elizabeth Laible was his very faithful and competent secretary. My title was Assistant to Chief of Publication, and while I did some work on THE CONSERVATIONIST my main job was taking photographs and motion pictures around the State and traveling with Abbott as a projectionist while he delivered lectures before a great variety of groups on the work and aims of the Commission.

Warwick S. Carpenter was secretary of the Commission and we, in our small department, saw a great deal of him and worked with him, especially in connection with the preparation of the Annual Report. The last time I saw Carpenter, he lived in Santa Barbara, California, and was occupied with some advertising enterprise. Abbott died in California in 1946. It is just possible that copies of the old CONSERVATIONIST, which I note are desired by you (or others on the present staff), might be procured through Mrs. Abbott (if she is still alive), or from some surviving member of the Pratt family.

I came across the enclosed ancient negative film of an Adirondack Guide, Anselm Parker, in my files and herewith present it to you for what it may be worth.

I note that Earl McGuirk is still listed on your masthead. Earl was multigraph operator when I was there and by a sort of metamorphosis became my successor when I took off.

Howard Cleaves, Staten Island

• *It's heartening, in these days of complexities and pressures, to hear from a pioneer in conservation—still active; still enthusiastic. We hope, after a like span of years, we can write* THE CONSERVATIONIST *editor a "I remember when" letter.—Editor*

Another old-timer

Dear Editor: Back in the December-January, 1953-54 issue of THE CONSERVATIONIST in the Back of the Book section, you carried a short note entitled, "Long Time No See Rainbow." Briefly, this article related how a rainbow trout tagged as a 1½-year-old fish in 1944 in Green Lake near Syracuse was recovered by a Syracuse fisherman in the spring of 1953. At the time of stocking, the fish was 10 inches long and weighed 7 ounces. When recaptured, it was 18 inches long and weighed 1¾ pounds. We stated that this was probably a record for length of time between tagging and recapture of a trout of this species. At the time this was published, many of our co-workers felt that this statement would be challenged and that there would be several reports from fisheries biologists throughout the country testifying to records of tagged brown or rainbow trout being at large for an even longer period of time. To my knowledge, no such reports were received.

In looking through some old records here in Connecticut, I came across a rather interesting report somewhat similar to the one described above. On April 17, 1943 an angler, fishing in the West Branch Farmington River, Barkhamsted, caught an 18-inch, 2¾-pound brown trout which carried a tag. This fish, incidentally, was deformed and was described as having a humpback like a perch. The tag was made of rubber and inserted in the abdominal cavity; the tag carried a request that it be returned to the Massachusetts Conservation Department. A check with the Massachusetts Department

revealed that the fish had been tagged in Massachusett's Sunderland Fish Hatchery on August 10, 1934 when approximately 7 inches long. It was stocked at the West Branch of the Farmington River at Otis, Massachusetts. Here again we have a record of a trout, this time a brown, being at large and carrying a tag for an eight-and-a-half-year period.

James P. Galligan,
Chief, Fisheries Division,
State of Connecticut

Carp and corn

Dear Sir: In the June-July issue, in the Back of the Book section, you write in re "Carp Control" mentioning fermented corn.

Could you please let me know the proper preparation of such sour corn or if it is commercially available. Also if there is a method to use this in hook and line fishing.

Gary Ehrman, New York

Dear Sir: In the July issue on the page "The Back of the Book" there is a small article on carp control. It states that carp are attracted to fermented corn and that this makes an effective bait.

Can fermented corn be used to catch carp by use of a hook baited with fermented corn or must a quantity be used just to attract the carp.

If fermented corn can be used as bait on a hook, can you tell me how to prepare the fermented corn. If you have other formulas for preparing carp bait that can be used with a hook would you please send particulars.

Walter S. Kraus, Long Island City

• *With reference to the use of fermented corn as an attractant for carp, I would like to offer the following comments: Carp will readily eat a number of foods that are not naturally found in their environment. These include all of the grains, at least a number of vegetables including potato, and any of the flour-based products such as macaroni and bread. Cheese and meat are also eaten. Some of the harder vegetable foods such as navy and soy beans are usually rejected, probably because they cannot be crushed by the teeth, which are in the throat.*

We have used ordinary chicken feed or whole kernal corn, both fresh and fermented, to concentrate carp in given areas. Neither appeared to us to have a distinct advantage over the other. Corn is easily fermented, by the way, by soaking in a container. The water should just cover the corn. Fermentation occurs in a day or two after which the corn will rot.

Baiting with a few quarts of corn is very effective at night, say from 8 to 12 p.m. and should influence the carp in the immediate area. These fish are rather active within a limited range, so if any numbers are present some will avail themselves of the bait.

The method by which carp locate baits is not similar to that followed by bird dogs, for example, since distinct trails are not present in water. Rather there are stimuli in which the fish are immersed; in this case the flavor of the corn. Hungry fish, at least, are stimulated to faster food-seeking activity by the flavor. If they happen to move away from the flavor the activity lessens. If they move to areas of stronger stimulus or flavor the activity increases. The bait is finally found by a combination of increased activity and chance. At this point the carp remain for a time to feed on an attractive and available food. The hook itself should probably be baited with a dough ball.

Carp, incidentally, are also attracted by such odd flavors as imitation maple, tobacco juice, molasses, instant coffee and saliva. These are probably no better than corn, however. Tests at the Fish Laboratory have indicated that carp do not detect oils. Therefore, some of the old standbys such as oil of anise are probably ineffective.—Howard A. Loeb, Conservation Biologist

Stray shark

Dear Sir: Am enclosing a picture of a young male nurse shark which was found dead in West Brook, a tributary to Lake George, by members of the Conservation Department Biological Survey crew in the Adirondack District. The shark measured 14 inches long and appeared to be in good physical condition. How this marine fish got there is a mystery, but it is possible that it came from a marine aquarium.

Michael Dahlbey, Biologist Aide,
N.Y.S. Conservation Department

Big beaver

Dear Editor: In the December-January issue of THE CONSERVATIONIST, Ed. Maunton said, in his article on beavers: "The beaver is our largest rodent, some weighing more than 100 pounds. The average large one in this State goes around 50 pounds, while most matured specimens will run between 35 and 45 pounds."

The first sentence of this paragraph rather jolted me because I have trapped beavers quite a bit and have read considerably about them, and it was hard to believe that any beaver could weigh more than 100 pounds.

Then I read the column by Clayton Seagers in the same issue, under the heading, "Notes for the Record." He said that he weighed in a 72¼-pound beaver. That seemed like such a record that I was sure I had Mr. Maunton boxed in.

The matter intrigued me so much that I did some considerable research on the question of weights of beavers. You might be interested in what I found.

Ernest Thompson Seaton said, in his book, "Animals," page 96: "A male beaver will weigh from 30 to 65 pounds."

Walter Chansler, in his book, "Successful Trapping Methods," page 110, said of the beaver: "Often weighing some 40 to 50 pounds."

In "Wilderness Trapper," Raymond Thompson, a trapper with extensive experience in western Canada, said, at page 105: "A full grown beaver will tip the beam at some 50 to over 70 pounds."

Enos A. Mills, in his book, "Beaver World," page 7, said: "Matured male specimens weigh about 39 pounds, but occasionally one is found that weighs 70 or more pounds."

In "Animal Kingdom," Volume I, page 294, Frederick Drimmer makes this statement: "A full grown beaver weighs a good 30 to 75 pounds. If exceptionally large, it may come closer to 100."

Edward R. Warren, in his book, "The Beaver," says, at page 8: "Adult beavers range in weight from 40 pounds upward. A 60-pound one is an unusually heavy one while 70 pounds is very rare . . ."

The authority Mr. Maunton must have relied on is Vernon Bailey of the Bureau of Biological Survey. In "Technical Bulletin No. 21," published by the United States Department of Agriculture, October 1927, at page 5, Mr. Bailey says of the beaver: "Older animals reach a weight of 60 to 70 pounds and there are records of old and fat beavers weighing 100 and in one case 110 pounds."

This is the state of the record as I found it. It is too bad that Bailey did not give any references when he referred to the records of beavers weighing over 100 pounds. As for me, I am still a skeptic and demand better proof than I have found before I will believe that there have been any wild beavers in North America weighing 110 pounds.

Howard M. Woods, Rochester

• *I have no doubt that Ed. Maunton is familiar with Vernon Bailey's old records and probably with a number of the other authorities mentioned in your letter but I suspect that, knowing Ed. Maunton, he's depending to an even greater degree on his own observations during a lifetime of trapping in his reference to beaver going, in some cases, more than a hundred pounds. Admittedly, this is some beaver, and I'm sure Ed. will agree with that. I have live-trapped a good many of them while working as District Game Manager in the Lower Hudson area of the State and I certainly never saw one that exceeded much more than 60 pounds.—Editor*

Sacandaga

Dear Editor: I couldn't help but admire your map of Sacandaga Reservoir in the last issue and wondered if you knew that the same map is on the grave stone in the village cemetery, once the grave of the Engineer who supervised the huge project? It is beautifully engraved in every detail on his small monument. Enoch Squires carried the story on his radio program over W.G.Y., Schenectady.

I expect I'm the only old lady, 78 years old, who would even thumb the pages of your CONSERVATIONIST. I never shot a gun or caught a fish in my life, but I always read every page in your paper.

Aunt Jane, Alplaus

Live wires

Dear Sirs: I am writing this note to bring to your attention a very outstanding performance by two of your staff of the Department's Division of Lands and Forests; namely, Mr. Dan Showers and Mr. Victor Schrader.

We had an interruption to the electric power line serving the Mountain Top area on Monday, July 17. The wire had obviously been shot by a rifle causing it to fall to the ground. One end of the line remained energized. When our crews arrived Mr. Showers and Mr. Schrader had the traffic stopped, our wires guarded and the situation well in hand.

I want to express my personal thanks as well as that of Central Hudson to your men for a very commendable performance and possibly avoiding what might well have been tragedy had these men not performed in such a capable manner.

Frank M. Berry, Resident Manager,
Central Hudson Gas & Electric Corp.,
Catskill

• *One more example of the off-beat tasks performed by field men of the Department—all in the day's work for them.—Editor*

Kiely's L.C.U.

Gentlemen: I received the August-September issue of THE CONSERVATIONIST today and was very happy to see that Mr. Kiely, my Skipper on the L.C.U. 569, had been appointed the Senior Marine Services Representative.

With Mr. Kiely as Skipper, and Richard Whynot as Bo'sun, we were always in good hands. Dick was Mr. Kiely's right hand man.

Enclosed are a few snapshots of the L.C.U. 569 and the De Long pier mentioned in Warren Stout's article, "Mr. Boat Inspector."

Paul D. Pratt, Kenmore

Snakes at home

Dear Sir: I have a query about snakes. Do they have a homing instinct? During the summer months of July and August, I live in a very old house with an unmortared stone foundation and large flat stone steps leading to the porch. During the rest of the year, the house is empty.

In the foundation and under the steps, apparently, there lives a large family of snakes. I am not hysterically afraid of them, but it does give me a start to find one or two sunning themselves in my flower garden every bright morning. Even this discovery did not seem serious two years ago when they were not more than eight or ten inches long, but by last summer they had reached a rather formidable length of fifteen or more inches and were considerably thicker than my thumb. Some of my guests are absolutely terrified of them.

Aware that garden snakes are not poisonous and that they do a great deal of good, I did not want to kill them. Instead, when I could get between them and the house, I chased them into the pasture that borders my lawn, but still snakes took sunbaths in my flower garden. In desperation, I acquired some knack at capturing them in a gunny sack, which I bore triumphantly up the road to the woods, and released the snakes some quarter of a mile from my house. To be sure, for every one I was able to capture, I failed to catch three or four others. However, during the course of the summer, I must have carried away six or seven. But it seemed to make no decrease in the number I continued to find around my building.

I am wondering if snakes, like dogs, have a homing instinct and if the ones I chased or carried away are returning to what both they and I consider our home. If so, how do I discourage them from sharing my home with me? Help, please.

Viola F. Lesure, Franklin Square

• *Biologists have found that most animals have some homing instinct, even such things as snails. With snakes, experiments have been carried out by the U. S. Fish and Wildlife Service that show these animals can return to their home areas from distances of over one-quarter of a mile.*

Snakes love brush and stone piles and, if you have any near your home, they should be broken up and removed as these will certainly attract the snakes when they leave the foundation of your house. As a temporary expedient you might spread moth flakes about your foundation as reptiles do not care for the odor of this chemical. Hardware and garden supply stores usually carry a chemical known as Paradichlorbenzene, sometimes more simply known as PDB which is more effective, but usually evaporates more quickly.—E. M. Reilly, Jr., Curator, Zoology, N.Y.S. Museum and Science Service

Stony Pond

Gentlemen: I heard about Stony Pond this spring from a newspaper article. One of my fishing partners and myself decided to take our wives there for a picnic one nice May evening. We brought along our flyrods in case of emergency. We caught a few on wet flies, and quit.

There was a family there fishing—a man, his wife and two children. He was located near the outlet tile and was using garden worms and pulling in a 6-7" newly-stocked brook trout on almost every cast. The other members of his family were located at intervals up the western shore of the pond; they didn't seem to be catching anything although apparently still fishing with garden worms also. This "sportsman" felt that his family was entitled to forty trout and he must have caught and kept this quantity *himself* before departing. Whether this was a daily occurence, I don't know.

What I can't understand is what this guy was trying to prove. He caught all or most of the fish himself. His kids and wife were located where the fish apparently were not biting.

It must be frustrating for the Conservation Department to try to provide recreation areas like this one and have certain people try to spoil all the fun for everybody else. This could be an ideal place to get kids started trout fishing if examples like this character were not around. I guess there's nothing we can do about it.

Hamilton Allen, Vice President and
Director of Personnel,
Oneida Ltd., Silversmiths, Oneida

• *Very little; it's hard to change human nature in general, and often impossible in particular.—Editor*

A sad task

Dear Editor: The following letter from Mr. and Mrs. Lawrence P. Brush, Arlington, Vt., was sent to us in appreciation of the efforts of Game Protectors French and Hulett of this Division to locate their son, John J. Brush, who was lost in Lake Champlain last spring.

The Protectors spent five days from daylight to dark in severe weather searching the shorelines, islands and the waters of Lake Champlain. The search by them and others was unsuccessful.

Dwinal Kerst,
District Game Protector,
Ray Brook

Dear Sirs: There is no way we can ever thank you enough for all you did in your efforts to find our son, John J. Brush, on Lake Champlain. However, we shall ever be mindful of all your efforts and will try to repay this by helping some other organization, group or person whose aim is to be of a help in time of need as you so generously did.

Most sincerely,
Mr. and Mrs. Lawrence P. Brush,
Arlington, Vermont

• *Sometimes the tasks are not only hard, but heartbreaking.—Editor*

Moles

Dear Sirs: Mine is a grave problem. I hope you can help me.

Our lawn is becoming all channeled by the little moles. They are doing so much damage. Their destruction is not only in one area, but in many.

Please tell me what can be done to get rid of them. We have never had such a condition before.

Mrs. William H. Roberts, Grand Island

• *One of the ways in which to get rid of moles is to deprive them of their food supplies. If you would treat the lawn area, particularly, with insecticides which may be recommended by your County Agent, the grubs and other soil inhabiting animals which attract them will be destroyed. In this way, they will be deterred from tunneling through the area which they presently are damaging.—Arthur W. Holweg, Supervising District Game Manager*

Marine district

Dear Editor: There are several topics that I want to comment upon which have had their origin in CONSERVATIONIST articles. However, the one that I am most concerned with is the one dealing with the "Reorganization of Field Services."

I think that no one will question the common sense attitude of establishing fixed regional lines to avoid duplication of services, but when the Marine Region is mentioned, there is something left to be desired.

One might ask, just what is the Marine Region? Some writers have given the impression that it extends along the Hudson River to Troy. Your article says that it is Long Island and the Metropolitan New York section. Well, then, to most people, in and out of government, the metropolitan region covers Rockland and Westchester counties as well as New York (city), Nassau and Suffolk counties. To make matters more confusing, the map by Irving accompanying the article includes only New York (city) in the Marine Region.

The basic question might be whether the Marine Region just covers the Atlantic Ocean to a point three miles from shore plus the New York portions of Raritan Bay, Arthur Kill, Upper New York Bay, Long Island Sound and the Hudson River to the New York (city) line or to the New York (State) line near Hastings, or does it include the counties themselves as well? If it is not the latter case, what region does Long Island belong to, because although they might not have a great a number of problems as the other regions, their problems must be similar? In any event, if you could spell out clearly the limits of the Marine Region and the relationship of New York (city) and the other counties involved, to it, I'm sure the whole matter will be made a lot clearer.

In regards to fishing within the borders of New York (city), who is responsible for law enforcement? The Parks Department restricts fishing in fresh water in Kings, New York, and Bronx counties to those under sixteen but despite this adults can be seen on many occasions. Whose laws take precedence in those cases where open seasons conflict?

One final question on fishing. How come that New Jersey requires that non-residents of that state to have fishing licenses (New Jersey) when fishing the Hudson River, even when fishing from the Palisades Interstate Park's New Jersey Section? I thought that similar laws prevailed when fishing common bodies of water, such as on Greenwood Lake.

George M. Zoebelein, New York

• *I can appreciate your confusion about the term "Marine Region."*

We commonly use Marine Region to designate that part of the State south of the Westchester County boundary. It includes the five counties of New York and the Counties of Nassau and Suffolk. We may refer to either the marine fisheries of that region or to the fresh water fisheries and wildlife of the region.

For legal purposes the Fish and Game Law defines the Marine District to include the waters of the Atlantic Ocean within three nautical miles of the coast line and all other tidal waters within the State, except the Hudson River northerly of the south end of Manhattan Island. Strictly speaking, this term applies only to the marine waters of the State.

Our game protectors and marine fisheries protectors are responsible for the enforcement of the Fish and Game Law within New York State. State police, city police, park police and other peace officers also have the authority to enforce the Fish and Game Law. City and park regulations are enforced by the city and park police. The open seasons are set by the State. However, the city would have the right to restrict the use of its lands for fishing.

Our law provides for reciprocity of fishing licenses between New York and New Jersey in Greenwood Lake. There is no provision in our law for reciprocity in the Hudson River, however, since no license is required to fish in the New York waters of the Hudson, south of Troy.—W. Mason Lawrence, Assistant Commissioner

Antler color

Dear Sirs: I am puzzled as to the difference in color of deer horns. You see, I was fortunate enough last fall, to bag a nice ten-point buck near Stillwater, Town of Webb and this deer had very dark brown horns, as were those of two other bucks that I saw on cars in the same locality. I have hunted over quite a bit of the State but have never come across deer with antlers of such a pronounced dark brown hue.

Could it be that these deer "filed" their horns while in the velvet on tag-alders or is there another explanation?

John M. Gilbert, Barneveld

• *The dark brown color in a deer's antlers is actually dried blood. It was captured in the antlers as they hardened and before the velvet was shed.*

I do not know of any specific reference explaining why the antlers on some bucks have more while others have less blood captured in the hardened antlers. But as you have observed, for individual deer the color of antlers does vary from dark brown for some to almost white for others.

At our deer checking stations, we see the full range in color.—C. W. Severinghaus, Leader, Big Game Management Investigations

Pectinatella

Gentlemen: I was interested to read, in your latest issue, a discussion of the "working" of fresh-water ponds and lakes, caused by the growth of algae. It stimulated my curiosity about an apparently related phenomenon, which has never been explained to me.

Quite a few years ago, I used to observe Otisco Lake while it was "working." In addition to the green algae scum on the surface, with the accompanying odor and occasional bubbles from the bottom, we would sometimes find large jelly-like masses on the bottom, which did not resemble spawn or anything else familiar. These masses were free and frequently washed ashore by waves, although they may have been anchored originally and worked loose by wave action. They were roughly globular in shape, with the consistency and appearance of a firm, grayish, translucent gelatine and reached the size of a large cabbage. When cut open, no cellular or egg-like structure was visible to the eye. If left on the beach, they would soon dry up and disappear.

Otisco Lake, as you may know, is divided unequally by an old stone roadway across it, about a mile from one end. The smaller lake was where we observed these jelly balls. That part of the lake is shallow, with a predominantly mud bottom. Almost all the common game fish and pan fish were present, with some suckers and bullheads. In addition, the smaller lake was heavily infested with carp at that time. The feeding activities of the carp kept the waters muddy continuously. I believe that much of the water area was originally grass or woodland that flooded after the construction of the dam at Amber. The bottom abounded in old stumps and trees.

If you can shed any light on these curious jelly balls, I would be pleased to learn more about them. They may be a common fresh-water phenomenon, but I have not noticed them in other lakes.

James Stafford, New York City

• *These large masses of jelly are colonies of Pectinatella, a fresh water bryozoan. Some marine organisms of this type form coral but this one secretes a clear jelly on which the colonies can be seen at the surface as irregular markings. — John R. Greeley, Chief Aquatic Biologist*

Blow high—blow low

Gentlemen: I go deer hunting every year and have often aided in the hunt for lost deer hunters.

Many times while deer hunting, I've heard two or three quick shots, the signals of being lost by some of the parties that I've hunted with.

Now if I or you try to investigate every incident like that, which usually is someone shooting at deer, we'd never get our deer hunting done. Also if anyone is lost a length of time, he will run out of ammo, that he might vitally need.

My idea is to have the Conservation Department issue a horn or whistle of very high or very low pitch and make it mandatory that each deer hunter have one. This I believe will help.

George Simmons, Latham

Credits

First cover, Charles Brown; second cover, pages 5, 9, 38, 40, Nick Drahos; 2, 12, 13, 30, 31, Roy Irving; 3, Clayt Seagears; 4, Irving, Dave Allen; 6, 7, 33, 35, Earl McGuirk; 8, Drahos, F. B. Emerson, Jr.; 11, John R. Greeley, McGuirk; 15, Donald J. Dean; 16, 17, 18, 19, 22, 23, 24, 25, third, fourth covers, H. Wayne Trimm; 20, Geneva Exp. Sta.; 21, Geneva Exp. Sta., Drahos; 26, Muriel Danahy; 27, Ed. Mergard, *Hounds & Hunting*; 28, Empire Beagle Club; 36, Hon. Harold C. Ostertag; 37, Am. For. Prods. Indus., Inc.; 39, Paul Kelsey; 41, Int. Paper Co.

How To Do It Series:

How to Catch a Muskrat

by Edward Maunton

MUSKRATS are the most numerous and in the aggregate, the most valuable and the easiest fur-bearer to trap in New York State. It requires no great skill to catch a few of these animals but to get them in numbers and under adverse weather and water conditions takes as much skill and hard work as does any other trapping.

Muskrats are not trap shy as a rule, nor do they fear the so-called "man scent." They seldom "belly" a trap and spring it as do otter and beaver, but they will wring and twist out of traps, leaving a foot in the trap almost every time unless the set is fixed to drown the 'rat or one of the several guard-type traps are used.

The guard-type trap is the most humane and efficient trap, but due to its larger size there are some sets where they cannot be used as handily as the ordinary trap.

It is a good practice, as well as more humane to make all sets, even when using the guard-type trap, into drowning sets. The trapped 'rat is not as apt to be taken by owls, hawks, foxes or bitten by other 'rats when it is under water.

There are many ways of making sets for 'rats according to the different types of habitat in which they are able to live. Marsh, stream and pond trapping, in most cases, require somewhat different types of sets during open water than when trapping under ice conditions. One of the best sets for open water trapping in open marshes, ponds or large streams is the float set. This involves one or more traps set on anything floating that will not turn over or tip up when the 'rat climbs up on it.

Logs, planks or small rafts made for this purpose work equally well. These devices should be anchored to a stake so they will not drift away and so they can rise or drop with changing water levels. This set will be working when others are put out of commission by changing water levels. It is a simple matter to drown 'rats caught in this set, the weight of the trap is all that is needed if the water is deep enough.

Cleats should be nailed to the plank or raft to hold the traps in place. On a log or timber, notches can be cut to do the trick. This set works best in open water or sparse flag beds where there is not much of anything for the 'rats to climb up on to rest or eat.

Another good set for the same type of habitat is the mound set. This is made by raking or piling up marsh vegetation so the top of the mound is four or five inches above water and setting one or more traps on it.

Any stumps, natural mounds and such are good places to set. Often droppings, cuttings and other signs of 'rats using these places will show where the traps should be placed. A good muskrat scent will help attract 'rats to any of these sets at all seasons.

Traps in any type of set should be level and firm, not cocked up or lying loosely. Traps should be level or slightly below the level of whatever they are set on. Traps set on hard surfaces that cannot be scooped out to make a bed for the trap can be padded under and around with vegetation until it sets firm and level.

When trapping along streams and around ponds, paths through brush or other vegetation, especially where the 'rats leave and enter the water, are good places to set if the water is deep enough to fix a drowning set.

Overhanging banks and tree roots usually will show signs of 'rats coming out to feed and dry off. Sets usually can be made at these places without much trouble. Sometimes the place will need some fixing to get the trap where the 'rat will have to put his foot in it. This can be done by narrowing the approach or trail with sticks, or by digging out a channel for the trap to set in.

Where banks are above water and there are no natural places to set, a hole about the size of a muskrat burrow dug back into the bank, with the bottom of the hole below water level makes a good set. Sometimes there is a bonus with this set for mink are often caught in this manner. The set can be improved by draping the entrance with bog grass or similar and lining the inside of the hole with aquatic vegetation. The finished set should resemble a 'rat feeding place. The trap is set at the entrance and should be under water and covered lightly with whatever the hole is lined with.

In settled parts of the State where there are streams crossing under the roads, traps set in culverts and under small bridges are very good. Some trappers set in these places exclusively. Usually these places have to be fixed up with stones or something to narrow up and guide the 'rat into the trap.

During severe winter weather when the water is covered with thick ice, it is a lot harder to catch 'rats. It is illegal to set in muskrat houses or on push-ups (muskrat feeding mounds) in this State so most of the winter trapping in marshes is done in the under-ice runways through flag beds or other vegetation. These runways are easily located if the ice is clear. A trap set in the runway at a restricted place where the 'rat has to put his feet down is the usual set with leg gripping style traps. Some of the body gripping type traps work better here.

Along streams and around ponds sets can sometimes be made in the same way, at bank hole entrances. Here again the body gripping type trap works best.

After snow drifts up along stream beds and in flag beds, the 'rats are often able to get through the ice and will have tunnels under the snow. Sets can be made in these tunnels where the 'rats come through the ice if the water isn't too deep. If the water is deep, the body gripping type of trap can be used. These places should be sealed up with snow after the set is made to keep them from freezing.

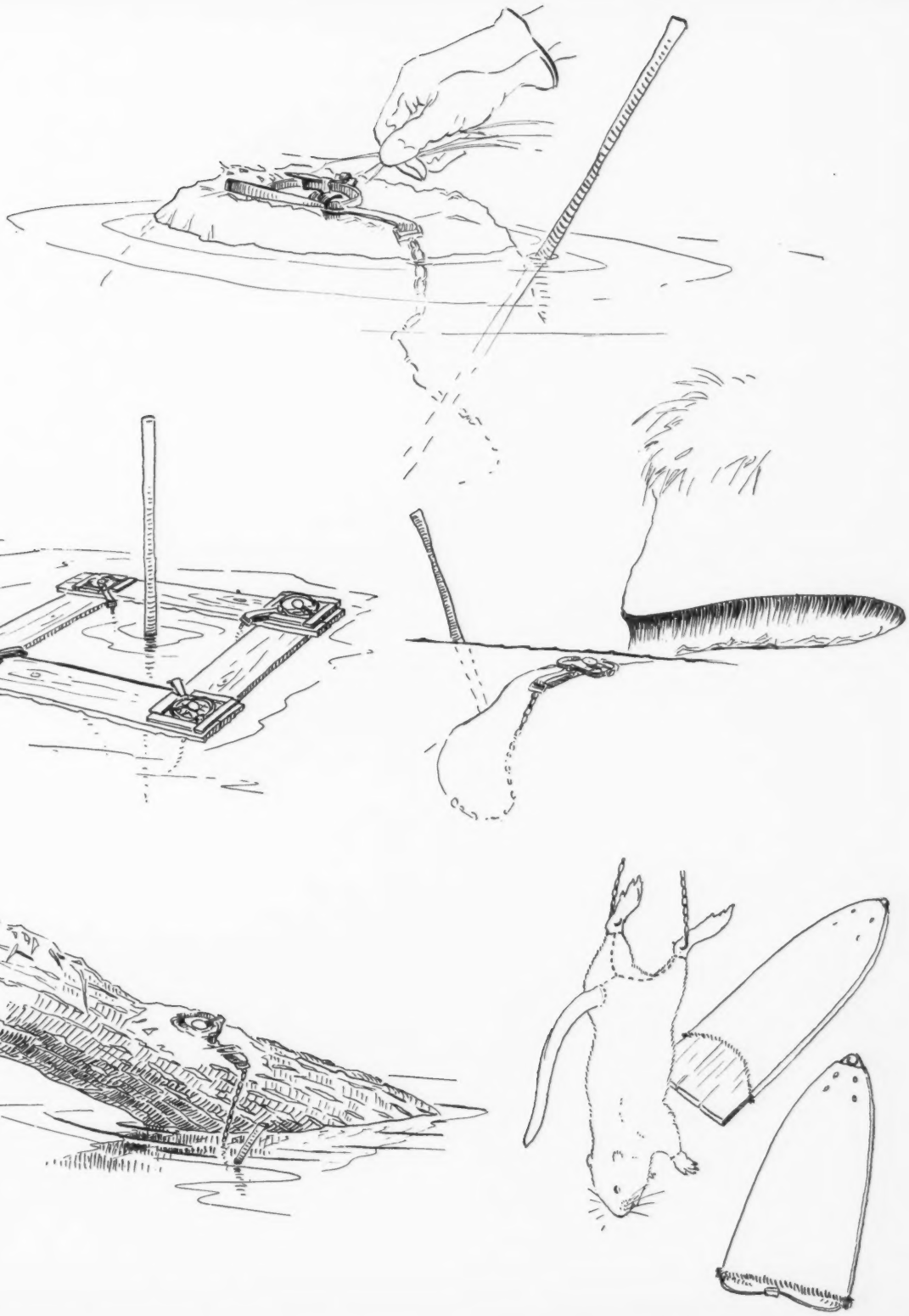
All of these sets will work, thousands of 'rats are taken in them every season, but, as is true with any craft, experience and practice are needed to get good results.

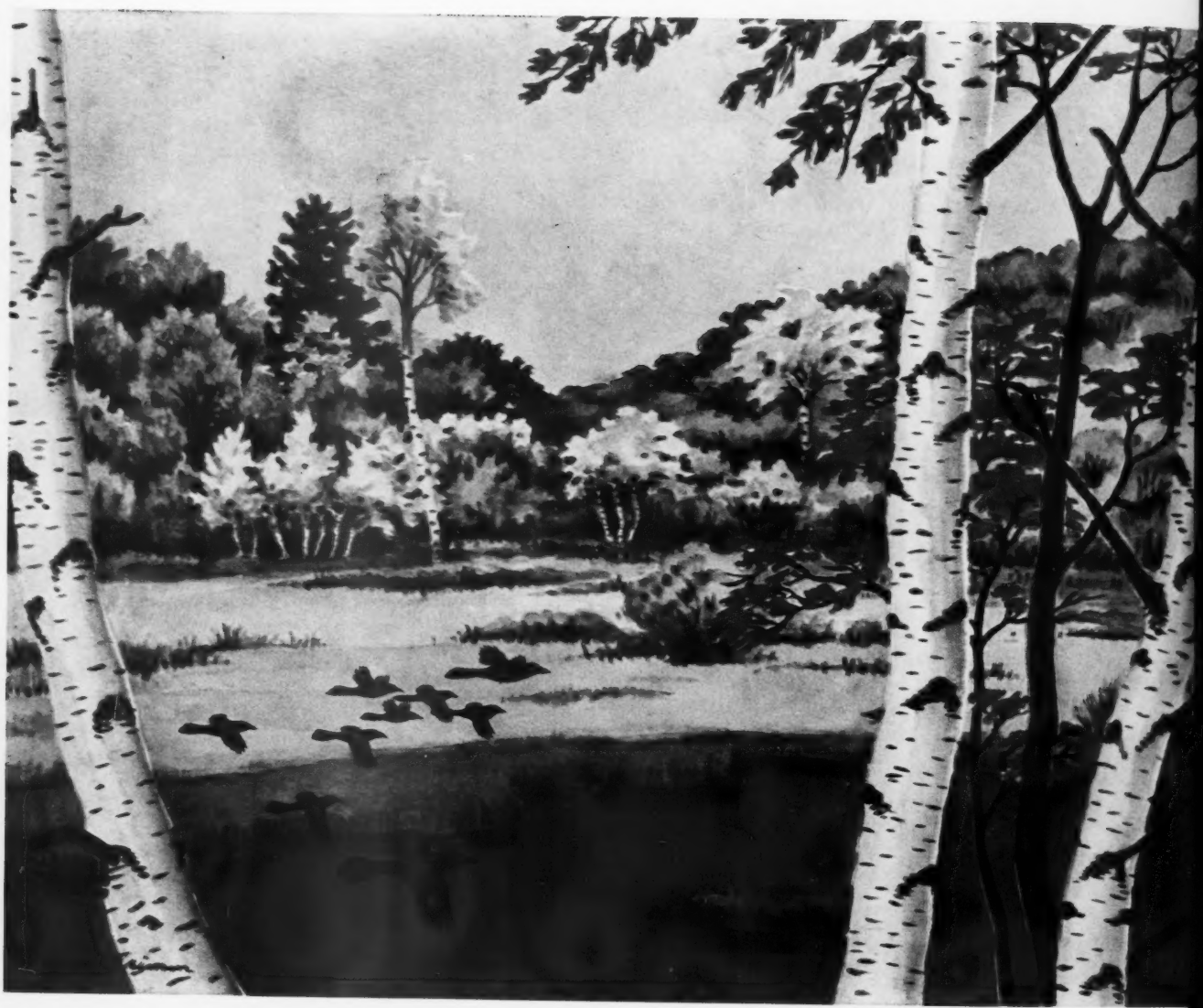
Muskrat Skinning and Pelt Care

Muskrats are easy to skin. With practice, anyone can skin a 'rat in a couple of minutes. Some "pros" can skin one in less than a minute.

The skin should be cleaned of fat and membranes. This can be done in a few minutes on a solid board with one of the fur scrapers that can be bought for a dollar or so, or with a similar tool.

The skin should then be dried on either a board made for this purpose or on a steel wire frame that can be bought from the several trapper supply houses. Most trappers prefer the steel wire frame. If a board is used it should be sawed through the middle lengthwise and a small wedge inserted at the base or open end after the skin is tacked on. Otherwise, it will be difficult to get the skin off after it dries—it shrinks and sticks to the board.





Southward bound